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Free Trade in Rubber

HAD some one else than Henry Ford made a pronouncement in favor of world-wide free trade the chances are that it would have got but casual attention; but inasmuch as this recent deliverance of the Monarch of Motordom was made by a man who has achieved such signal success with his products, a large portion of the public attaches much importance to the declaration. Crediting the Sage of Detroit with the best motives, the fact remains that he but echoes the sentiments that economic doctrinaires have expressed ever since the Union was born when he declares that "We in America can live, if we will, entirely within ourselves; but keeping out the goods of other countries is a narrow, provincial policy not conducive to our best interests."

Mr. Ford declares that the free, unhampered trade among our forty-eight states should be duplicated in our world of commerce, yet overlooks the fact that national dealings differ radically from international. The states are but members of a family, integral parts of the Union, with common, intimate interests. Unfortunately, unfettered commerce with the nations of the world is not so easy of achievement; and until human nature undergoes a very considerable change in other lands, it will be but the part of wisdom for Americans to look out for themselves and to safeguard with every reasonable restriction that great industrial fabric which has contributed so much to their prestige and prosperity.

Considering the rubber industry alone, it is well known that the nations which have free trade can not compete with American-made tires, for instance; but those that protect their manufacturers are in foreign and neutral markets our strongest competitors. Certainly it is not pleasant to contemplate what would become of our great rubber factories and their tens of thousands of well-paid operatives, as well as the hundreds of thousands indirectly dependent upon them, were their owners forced to struggle for buyers in their home market against a flood of undutiable goods from European and Asiatic mills.

In fact, it is competition with cheap-labor products abroad that accounted chiefly for the reduction in our exports of rubber manufactures from $37,692,842 for the year ending June 30, 1923, to $35,542,822 for the year ending June 30, 1924. Certainly if we can not defend ourselves better abroad, we should at least protect ourselves fully at home.

Regarding Rubber Restriction

ONE of the effects of the recent rapid rise in the price of rubber has been the arousing of keener interest than ever, not only among the leaders of the rubber industry, but among students of economics the world over, in the past, present, and prospective operations of the Stevenson Restriction Act. When it took effect on November 1, 1922, the measure had for many a mere academic concern. Others looked at it askance as a resource of doubtful expediency that might even prove a boomerang to the planting interests, then discouraged with sagging prices and mounting stocks. Others openly opposed it as a "vicious combination in restraint of trade"; but a great many manufacturers nevertheless viewed it indulgently. The general sentiment expressed was that inasmuch as all other means for the relief of the growers having failed, it would be only fair to give the new plan a fair trial; and

that, after all, planters of rubber were as much entitled to fair returns and security of investment as manufacturers.

Defenders of restriction contend that the Act has quite justified its existence and that it has benefited consumers as well as producers by preventing demoralization of the crude market. Answering the charge of unfair repression, they claim that had any fairly profitable outlet been provided fully 250,000 tons more of rubber would have been exported during the two and a half years intervening since the Act became operative. A strained condition in the market has at least been eased during that period by the marketing of 150,000 tons of surplus stocks.

The primary purpose of the proponents of the Act was not to secure an extravagant price, but simply to assure to rubber growers the "economic minimum" of 1*s* 3*d* a pound. Even this figure, they say, had not been averaged daily during two and a quarter years of restriction; and that if latterly it has been considerably exceeded it has been because the biggest buyers, who could by steady purchasing have secured at moderate rates ample rubber through progressive releases, have elected to let prices drift and to purchase only from hand to mouth; in fact, played into the hands of speculators who were more alert than they to see an advantage. Hence the execration of the Stevenson Act and the hue and cry about British monopoly.

That is how Restrictionists view the situation. But American buyers particularly can not see why they should be reproved for not cooperating with Restrictionists. It is hard to convince them that it was incumbent on them to foster the rubber planting industry when it found it hard to sustain itself, any more than it would be obligatory on them to insure growers of cotton a minimum price. They ask why guarantee 1*s* 3*d* when well-manager estates report producing cost even less than 8*d* a pound. Nor are they comforted with semi-official assurance that six months hence, if the average be kept over 1*s* 6*d*, the export allowance will be raised to 95 per cent of the standard, with the possibility of the export bars being soon afterward let down completely. Most buyers consider restriction neither flexible enough nor sound economically, and that, besides imposing unwarranted hardship on them, it is inimical to the best interests of the whole rubber industry.

Slab and Lump in the Offing

HAROLD HAMEL SMITH, who knows tropical products in their entirety, including rubber wild and planted, thus talks of Dutch "Native Rubber":

"Reports of the quality and condition of the native rubber which has been arriving in Singapore during the past twelve months show a steady deterioration in the crude article. Not only is moisture present in large quantities, but in many shipments stones, earth and foreign matter as well are to be found. The so-called native sheet has, in fact in large measure, deteriorated to lump, similar in quality and prepared in a similar manner to the West African lump, which in pre-plantation days formed a large part of the world's rubber supply."

With rubber at 25 cents, lump and slab from Asia, Africa, or the Americas will rarely appear in the market. But with high-priced rubber, washers and dryers will start up again and uneven cures, porosity and "blooming" will have to be guarded against. Also will come a new demand for disinfectants and deodorizers.

Where Age Improves Rubber

PARADOXICAL as it may seem, and at variance with familiar experience, rubber sometimes improves with age instead of perishing through long usage. For submarine cables, where the rubber insulation is well removed from atmospheric influence, a compound is often placed directly upon the copper conductor containing as much as 40 per cent of Pará or Hevea rubber. Such a high proportion of pure rubber, it is stated, would not be advisable, however, on a cable exposed to air, as a compound with a very high rubber content would be likely to soon oxidize and harden; but under water, and in the low, nearly uniform temperature of the bed of the sea, the high quality rubber insulation seems to actually improve rather than deteriorate. Cases are cited where rubber-insulated ocean cables, which gave an insulation resistance test of 4,500 megohms per mile at the factory before laying had, after several years' service, tested up to from 6,000 to 9,000 ohms.

THAT THE STUDY OF RUBBER TREES AND PLANTS WILL have place in the great research department projected by the New York Botanical Garden is a certainty. The garden has, to be sure, funds ample for ordinary needs, but to make it a world center much more money is needed. The eminent gentlemen constituting the Advisory Council are therefore starting a movement to add $7,000,000 to existing funds. The value of an institution thus equipped can hardly be overestimated. England has long had just such a one at Kew. Situated just about as far from London as is the Bronx from New York, there are assembled for study and experiment a collection of tropical, subtropical, and temperate zone plants and trees almost beyond cataloging.

The success of the British planters in coffee, tea, cinchona, rubber, cotton and many other products are directly traceable to the work done at Kew. The whole world has been and is searched for plants, shrubs, and trees that under proper cultivation may be of greater use to man. With an equipment at the Bronx equaling that of Kew, vast service will come to the world, to the United States, and to the rubber industry.

THE SOUL OF THE SLUGGARD DESIRETH, AND HATH nothing: but the soul of the diligent shall be made fat. Proverbs, 13:4.

The Putnam Balloon Tire Patent

Tardy Grant of Basic Patent Rouses Balloon Tire Industry—Manufacturers Warned of Infringement—May Cause Much Litigation—Parallel Cases in Past—Progress of Patent Through Patent Office—Present Ownership

AFTER about two years of unhampered and steadily increasing balloon tire production by most of the leading tire manufacturers the American tire industry has recently been startled by the somewhat tardy grant to a Detroit, Michigan, inventor of a patent for balloon tires. Approval by the Patent Office of the inventor's claims, filed nearly five years ago, implies the related right to assert control over production and to demand royalties from all the many companies making and selling balloon tires, and the hostile attitude of tire manufacturers toward this unexpected development and the tangled situation thus created may cause a legal battle involving millions of dollars.

Tire Manufacturers Warned of Infringement

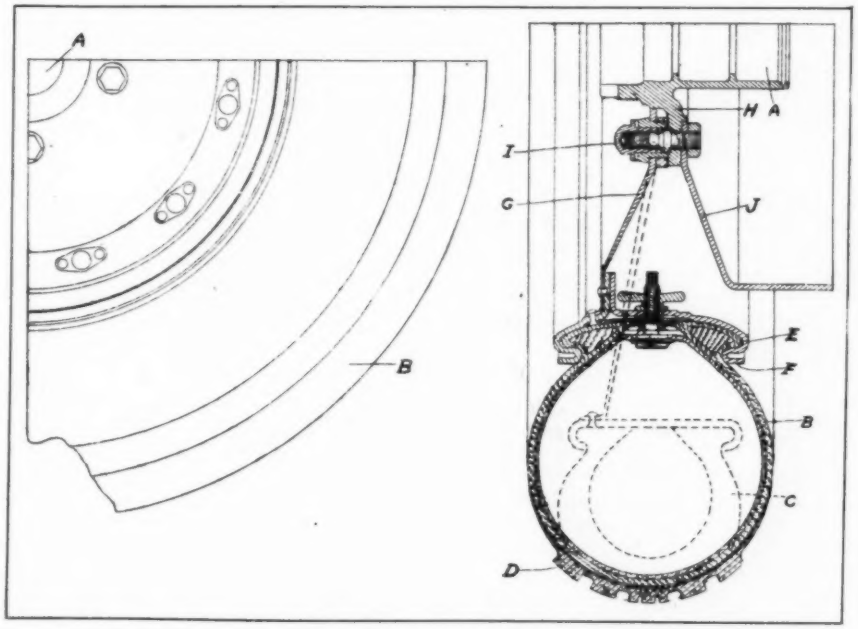
Tire manufacturers have received formal notices from the Steel Wheel Corporation, of Detroit, Michigan, which is understood to be a subsidiary of the Motor Wheel Corporation, of Lansing, Michigan, that this company is the exclusive licensee under the Alden L. Putnam patent for the manufacture of balloon tires. The notice printed herewith is the form sent out in such instances, which warns against infringement and offers to grant licenses to manufacture under the patent on liberal terms.

Parallel Cases in the Past

Well informed men in the rubber trade fear that the tire industry now has a problem on its hands not unlike that of the long standing controversy over the Selden patents which engaged the interest of the motor industry in its early days. It will be remembered that for many years motor car manufacturers willingly paid royalties to the holders of the Selden patents. They found out what a costly error they had made, however, when Henry Ford, after years of litigation disputing the legality of the patents, won out in the Supreme Court.

To seek parallels within the tire industry itself, the possibilities of the present situation recall the long protracted litigation to establish the validity of the Tillinghast single tube tire patents, as well as of the Gormully & Jeffery clincher tire patents, and the subsequent pools and infringement suits to impose licensing arrangements and collect royalties. This litigation kept the tire industry in a turmoil from the early nineties until the expiration of the last of these basic patents about 1910. Soon afterwards came the litigation over the Palmer thread fabric and cord carcass patents, the latter forming the basis of the revolutionary Silvertown tire, which was the forerunner of the cord and balloon tire of today, and which may yet figure largely in relation to the Putnam patent. In a field closely allied to the tire industry the sensational legal battles relating to the Perlman demountable rim patents are also recalled, and one wonders if a search of the patent files may yet disclose a grant anticipating the Putnam balloon tire patent as the Munger patent antedated the Perlman claims.

The granting of the patent, however, indicates that so far as the Patent Office knows Putnam was the first and original applicant for a patent on the idea of a low-pressure tire, of in-



(A) WHEEL HUB. (B) TIRE WITH CROSS-SECTIONAL DIAMETER IN RATIO OF FIVE TO THREE. (C) STANDARD TIRE. (D) THICKNESS OF TREAD AND SIDEWALLS LESS THAN STANDARD TIRE. (E) (F) CLINCHER RIM. (G) DISHED DISK. (H) HUB FLANGE. (I) CLAMPING BOLTS. (J) BRAKE DRUM.

The Putnam Balloon Tire and Wheel

creased cross-sectional area and with thinner walls than the normal pneumatic tire. Whether, while the Putnam application has been pending, there have been other applications for a patent on this idea which has been generally adopted by tire manufacturers is not known because all applications are held secret by the Patent Office. It seems certain, however, that many legal hurdles will have to be jumped before the liability of tire manufacturers under the Putnam balloon tire patent is definitely determined and it is finally known what bearing the granting of the patent may have on the whole tire industry.

Of course the rubber trade naturally regards the balloon tire merely as one more logical and inevitable advance in cord tire construction, in the development of which several of the leading tire companies had a hand simultaneously, and so considers it no more patentable than the cord tire itself, which embraces many such advances. In fact, Bertram G. Work, president of The B. F. Goodrich Co., Akron, Ohio, is quoted as saying that in his opinion the Patent Office could not have granted the Putnam patent with a full knowledge of the history of the cord tire. In view of the success some fifteen years ago of the original low-pressure, large-diameter, thin-walled Palmer cord tire he does not believe that the balloon tire of today can justly be regarded as a new idea capable of protection by a valid patent. Those early cord tires, he points out, had all the basic characteristics and virtues of the balloon tires of today, and although the balloon tire idea did not gain great headway in this country at first, thousands of low-pressure, large-diameter, thin-walled cord tires were made for airplanes during the war.

Volume of Balloon Tire Production

It is not likely that any effort will be made to collect royalties on the 9,000,000 or more balloon tires manufactured while the patent was pending.

The importance of the issue involved is indicated by the fact that balloon tires now constitute over 50 per cent of the total output of approximately 115,000 tires manufactured daily in the Akron, Ohio, district. The demand for the low-pressure casings all over the country has grown constantly, and in March balloon tire shipments totaled 1,168,297, against 764,874 in February this year and 141,272 in March last year. Production in March was 1,217,367 balloon tire casings, compared with 740,106 in February this year and 216,808 in March last year.

There were 3,945,440 balloon casings produced during the first four months of 1925, compared with 3,551,325, the estimated production for the entire year of 1924.

Progress of the Patent Through the Patent Office

Application for the Putnam balloon tire patent was filed August 13, 1920, serial number 403,192, and the patent granted May 12, 1925, bears the serial number 1,537,879. As granted, its three claims read as follows:

1. A pneumatic tire of normally circular cross-section and designed to carry a predetermined normal load at a substantially reduced inflation pressure, modified from standard practice for the same load by a substantial increase in cross-sectional area and a substantial decrease in ratio of wall thickness to cross-sectional diameter.

2. A pneumatic tire of normally circular cross-section and designed to carry a predetermined normal load at a substantially reduced inflation pressure, modified from standard practice for the same load by an increase of at least 50 per cent in cross-sectional area and a substantial decrease in the ratio of wall thickness to cross-sectional diameter.

3. A pneumatic tire vehicle wheel designed to carry a predetermined load at substantially below standard inflation pressure and with a materially decreased total weight of tire and wheel body; modified from standard practice by a substantial increase in cross-sectional diameter of the tire with a decrease in ratio of wall thickness thereto and a substantial decrease in the ratio of wheel body to tire in both radial dimension and weight.

The original application for this patent was denied by the examiners on April 5, 1922; denied reconsideration by the examiners on April 3, 1923; sustained in part on appeal to the examiners in chief on December 21, 1923; revised on appeal on February 15, 1924, June 24, 1924, and February 28, 1925; and was brought to a final hearing and again modified before Commissioner of Patents Robertson on February 28, 1925.

The original application included four claims, which were rejected. A fifth claim was then added on appeal to the examiners in chief and all were recommended to be considered allowable on December 21, 1923. On appeal, three additional claims were proposed but were not found allowable. On February 15, 1924, the applicant canceled the last four claims and inserted five new ones, all of which were recommended to be allowed.

Before issuing the patent it became necessary, in view of a possible interference, to refer the case to a law examiner, following which the Commissioner of Patents notified the applicant as follows:

> I have been unable to bring myself to the conclusion that the claims are patentable over the ordinary oversize tire, especially when the latter is used with less than the maximum pressure, a condition under which tires are often intentionally used.
>
> While some of these claims bring out the feature of the side walls being of a thickness differing from that of the standard tire, it is nevertheless a fact that it is common in different makes of tires to have different thicknesses of side walls. An oversize tire with walls thinner than the average would seem to anticipate this feature.

Thirty days were allowed in which to convince the commissioner that the claims involved patentable subject matter. On June 24, 1924, therefore, the applicant filed an amendment canceling all the claims previously in the case and inserting three new claims. The first two of the new claims correspond to those of the patent as granted. The third claim differs considerably from the final form.

In addition, on July 16, 1924, the applicant filed a brief to emphasize the points made in his oral argument together with affidavits substantiating it by Howard A. Coffin, Burton S. Gier, C. C. Carlton, J. B. Siegfried, John Painter, William E. Williams and Jesse E. McBride. The brief pressed the view that the claims defined a tire so radically new that it could not be anticipated by the use of an oversize tire inflated with less than the maximum pressure; that the tire was so radically new that the tire industry derided the idea as visionary and was reluctant to concede its practicability; that when finally adopted through public demand it compelled all the large manufacturers of tires and of the better makes of cars to substitute the tire of this application for the ones formerly used notwithstanding that it was necessary at great expense to provide new molds and reorganize the tire making machinery, and to otherwise considerably adapt the cars to receive the new type of tire by providing different sizes of wheels, different mud guards and even changing steering gear, etc.

The affidavits also indicated that when this type of tire was finally adopted it met with such marked favor that the plans of various car builders were held up and parts of their orders for wheels and standard tires were canceled in order to make the changes found necessary for the use of the new type of tire. For example, C. C. Carlton, of the Motor Wheel Corporation, Lansing, Michigan, stated that the new type of wheel called for by this tire increased in shipments from 125 in July, 1923, to 79,097 in April, 1924.

J. B. Siegfried stated that of the more than 2,000,000 passenger car wheels, exclusive of Ford wheels, made by his company during 1923 less than 1 per cent were for use with balloon tires. During the first five months of 1924, however, more than 25 per cent of the passenger car wheels, exclusive of Ford wheels, were for use with balloon tires, and that for the months of July, August and September this percentage rose to over 50 per cent.

Consideration of the facts presented led the commissioner to the conclusion that the tire of this application discloses more

Alden L. Putnam

INFRINGEMENT NOTICE SENT BY LICENSEE TO ALL BALLOON TIRE MANUFACTURERS

On BEHALF of the owners of the patent, and of our company, as exclusive licensees under it, we beg to call your attention to the Putnam Patent No. 1,537,879, issued May 12, 1925, and to say that the balloon tires you are manufacturing are believed to be an infringement of it.

If you should care to consider taking a license under the patent, we shall be pleased to grant you one under reasonable terms, otherwise we shall have to ask you to discontinue your infringement.

Please be kind enough to give the matter your consideration and advise us of your conclusion.

Very truly yours,

THE STEEL WHEEL CORPORATION,

Lansing, Michigan. by B. S. Gier, Secretary.

than is found in the prior art; that the applicant's tire is new, both in size and structure, and produces a new result that was not obvious nor suggested by making an ordinary or standard tire oversize and inflating it to a pressure less than normal.

The commissioner therefore held allowable the first two of the three claims filed on June 24, 1924, as they define a structure that differs from an ordinary tire in its substantial increase in cross-sectional area and a substantial decrease in ratio of wall thickness to cross-sectional diameter, and in its adaptation designed to carry a normal load at a substantially reduced inflation pressure.

The third claim for a combination of a vehicle wheel and a tire of the balloon type was held to be unpatentable on November 25, 1924, as the combination of a vehicle wheel and pneumatic tire is old and the novelty of the present invention lies in the tire itself. Thereupon the applicant filed a new third claim which differs from the third claim of the patent as granted only in the phrase "reduced inflation pressure" instead of "below standard inflation pressure." The change in wording to make the claim more definite was made by Commissioner Robertson in his supplemental decision of February 28, 1925, which is as follows:

A careful examination of this claim (the third claim as finally filed by the applicant) shows that it includes limitations not found in the third claim for which the new claim is substituted. In view of the fact that the construction set forth by this claim is said to have the advantages referred to in the argument filed in the paper inserting the claim, I am willing to resolve such doubts as I have in favor of the applicant. The advantages set up in the applicant's argument seem real, but the question arises whether these advantages are not those which would necessarily result from modifying the wheel to adapt it to receive the tire which is the subject matter of allowed claims 1 and 2. It may be that these advantages, obvious now that the combined wheel and tire have been put into use, would not be apparent even to one skilled in the art, except as applicant urges, as a result of the exercise of invention in making up not only the tire of claims 1 and 2, but the combined wheel and tire of claim 3. At any rate, there has been such a revolution in the art that I have, as above stated, decided in favor of the applicant.

Ownership of the Putnam Patent

It appears that the Putnam balloon tire patent is owned jointly by the Motor Wheel Corporation, of Lansing, Michigan, and the Midland Steel Products Co., of Cleveland, Ohio. The patent was assigned to the Detroit Pressed Steel Co., of Detroit, Michigan, and Harvey, Illinois, which has been purchased by the Midland Steel Products Co., and merged with the Parish & Bingham Co., of Cleveland, Ohio. According to E. J. Kulas, president of the Midland Company, the Steel Wheel Corporation was organized to hold the patent rights and a deal was effected with the Motor Wheel Corporation by which the latter took a half interest.

In recent years the Motor Wheel Corporation has become a large concern. It owns large timber lands, lumber mills and spoke factories in the South, having plants at Memphis and Jackson, Tennessee; Fordyce, Arkansas, and Columbus, Mississippi. The main manufacturing plants, of which there are three, are at Lansing, Michigan, and admirably equipped for making all kinds of wood, wire and steel wheels, hub caps, axle housings, brake drums, etc. By owning much of the sources of its lumber supply, its material costs are low.

The company has been practically five years getting under way, quietly adding to its facilities and at the same time to its list of customers until in 1924 its total sales exceeded those of its chief competitors. The management enjoys a high degree of confidence. While the balloon tire patent announcement has brought the company into the limelight, the potential profit possibilities have hardly yet been measured. Some predict huge profits while others deprecate the profit angle.

PERCENTAGE CONSUMPTION OF CRUDE RUBBER

Statistics based on the Rubber Association's quarterly reports which represent 90 per cent of the industry show the percentage distribution of crude rubber consumption in the United States to be as follows: pneumatic casings, 60.4 per cent; inner tubes, 16.4 per cent; solid and cushion tires, 5.1 per cent; mechanical rubber goods, 4.7 per cent; boots and shoes, 4.5 per cent; and all other rubber goods, 8.9 per cent.

VALUE OF AMERICAN ELASTIC WEBBING PRODUCTS, 1923

According to data collected at the biennial census of manufactures, the products of the elastic webbing industry in the United States totaled in 1923, $25,774,024. These goods represented part of the output of "cotton small wares," braids and narrow woven fabrics, which as a whole reached for the year in question a value of $73,223,566.

NEW SOURCE OF WILD RUBBER

According to the American Bankers Association, the Peruvian Government is considering plans for a railway which will bring into direct communication with the rest of the republic the important Department of Loreto, hitherto almost inaccessible. The wild rubber in the Loreto region is of very fine quality, but because of the difficulty of securing it, collectors have devoted more attention to the export of balata.

The Manufacture of Reclaimed Rubber

Development from Shoddy to Reclaim—Preparation of Scrap—Acid Process—Alkali Process—Washing, Milling, Straining and Refining Reclaims—Process Control—Inspection and Quality Standards—Typical Reclaims—Technical Selection and Volume Cost Comparisons for Economy

RECLAIMED rubber is the plastic product obtained by subjecting sorted vulcanized rubber scrap to processes of comminuting, cleaning, fiber destruction, devulcanization, milling and refining, by which it becomes available as a plasticizing rubber ingredient for new rubber mixings. The products are applied in the fabrication of most rubber articles and are recognized as indispensable on the score both of technical value and economy. Exact figures are not available as to the tonnage of reclaimed rubber manufactured annually in the United States. Reclaimers generally estimate the output at 100,000 tons, and increasing. Under present crude rubber prices the rate of reclaim production is much in excess of this estimate.

The first commercial reclaimed rubber product was known as "rubber shoddy." Although far from perfect, it was of great value and was used in footwear, clothing, carriage cloth and mold work. In carriage cloth for example, it was the chief ingredient and gave excellent service. So generally was it used that old boots and shoes sold as high as ten cents a pound, and the business of collecting and reclaiming was a very large one. The processes for reclaiming involved grinding the boots and shoes to powder, blowing out the loosened fiber, and then treating with live steam for 8 or 10 hours. This was called mechanical shoddy. Later the fiber was weakened by a sulphuric acid bath, washed out, and the product devulcanized, sheeted and sold. In time special magnet machines for removing iron, others for refining, removing brass splinters, etc., appeared, and a very excellent product was the result.

Philadelphia Rubber Works, Philadelphia, Pa.

U. S. Rubber Reclaiming Co., Buffalo, N. Y.

Today scrap rubber is not turned into shoddy but into reclaimed rubber manufactured in modern plants by well developed, scientifically controlled processes. Tires and tubes are now the leading products of the rubber manufacturing industry, and boots and shoes occupy a secondary place. These conditions have changed correspondingly the character of vulcanized rubber scrap, resulting in improved reclaiming processes and a far better product.

Process Development

The first real step forward in the art of reclaiming rubber was made when the acid process was developed. Coincident with this, several mechanical processes were worked out, but these were not as successful as the acid method. In the late 90's, the next important development was the alkali process. The real value of this was not appreciated, however, until a different form of scrap came on the market, i.e., automobile tires and tubes. Today the two main processes employed are the acid and alkali, but it is safe to say that the alkali process, or modifications of it, is utilized for at least 75 per cent of the reclaim produced.

The modern reclaiming plant begins the vigilant care of its ultimate standardized products by careful assortment of the scrap rubber received. This has already been separated into numerous classifications which are recognized by both dealer and reclaimer. Standard reclaims are based on classified scrap carefully re-sorted and prepared for processing under close control, check tested and inspected at critical points.

Preparation of Scrap

Sorting and preliminary treatment of the scrap is essentially the same whatever the subsequent chemical or devulcanizing method. All large pieces of foreign material are removed in the sorting process, so as to place as little burden as possible upon the subsequent steps in the process. Metal parts, leather, burnt, crusty, or hard particles are removed or rejected and only the soft pliable rubber is allowed to go to process.

The first step is to reduce the scrap to a finely divided stage, which is done by passing it through massive corrugated rollers. The first of these tears the bulk. The operation is repeated in accordance to the degree of fineness required. From this so-

[1] THE INDIA RUBBER WORLD, May 1, 1925, 533-534.

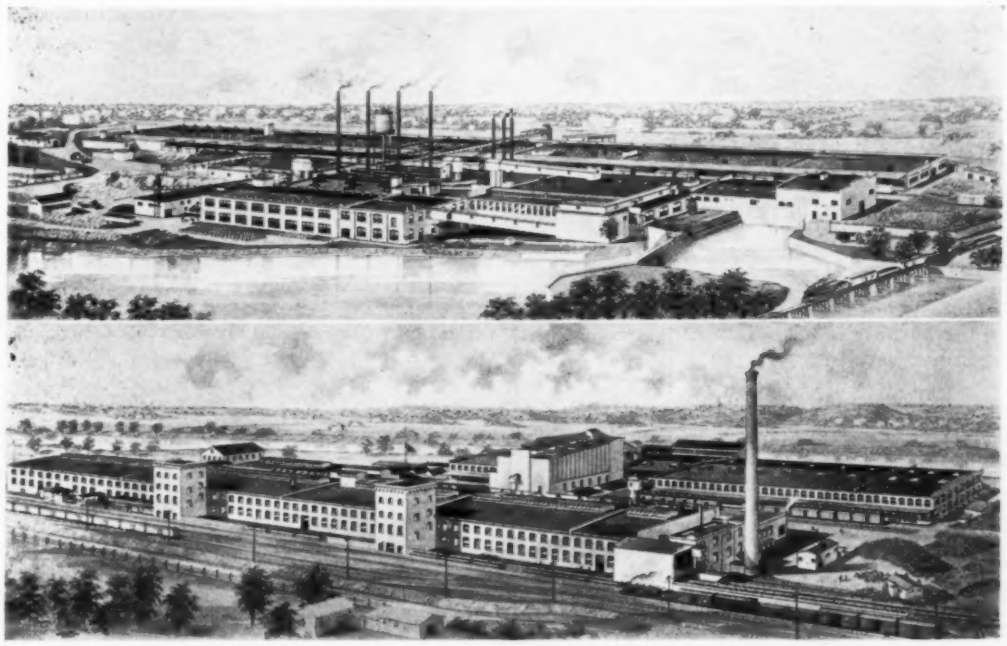
called cracking treatment, the scrap passes over screens, where a uniform state of fineness is obtained, coarse particles being returned for recracking or grinding. The thoroughly ground scrap, at this point, is passed over a magnetic separator. The purpose of this machine is to remove all particles of iron and steel. The finely divided scrap passes over a series of magnets retaining the metal. From this point, the cleaned waste is directed to the process.

The Acid Process

When the acid method is employed, the scrap is placed in large vats containing a weak solution of sulphuric acid, where it is left for periods of time, ranging from two to four hours, depending upon the strength of acid employed, the amount of agitation, and the amount of fabric to be removed. These vats are lead lined and generally have a series of steam pipes in the bottom to permit of the injection of live steam into the mass, thus insuring complete agitation and high temperature. When the fabric has been completely destroyed, the stock is discharged into washing devices. The practice at this stage varies somewhat. Some factories pass the defiberized washed rubber through grinding rolls to reduce to a finer state of division, and from there permit it to run through a riffler for removal of sand and brass. The latter consists of a long trough about two feet wide, set at an incline, down which a stream of water is permitted to run with the rubber. At frequent intervals small dams are placed across the incline, and the rubber floats over these, permitting the foreign particles such as sand, brass, etc., to be held behind the dams. It has been found that at this stage of the process, as high as 2 per cent of fine white sand is obtained from old boots and shoes. This amount is astonishing, in view of the cracking, grinding, washing and acid treatment which the stock has received.

From this point, the rubber is ready for devulcanization. This is generally done in large cylinders holding from 20,000 to 30,000 pounds of powdered rubber at a time. Various proportions of oils, softeners, tars, etc., are added to the mass before placing in the cylinders. The vessel is closed and live steam is then forced in for a period of 20 to 48 hours at steam pressures varying from 100 to 150 pounds. This has the effect of breaking up the relation of rubber to sulphur in the molecule and returning the rubber to a plastic state. Little or no chemical change takes place, except that the amount of free sulphur is very materially reduced.

After removal from the devulcanizers, the plasticized stock is transferred to dry screens where warm air is forced upward through it. The temperature of the air is carefully regulated and watched to avoid damage to the stock by overheating. Before its devulcanization, passage of the ground scrap through the tightest mill serves only to grind it finer. After devulcanization, however, the rubber exhibits milling characteristics resembling those of unvulcanized rubber mixings.



Above—Rubber Generating Co., Mishawaka, Ind. Below—Rubber Generating Co., Naugatuck, Conn.

The Alkali Process

In the alkali process, the finely ground rubber still containing the fabric, passes over the magnetic separator, and is then placed in a large cylindrical vessel containing a solution of caustic soda running from three to eight per cent, according to practice. This vessel, or devulcanizer, has a steam jacket and contains paddles for agitation. After being charged and sealed, steam is turned on the jacket and the paddles made to rotate for periods ranging from 8 to 24 hours, with the pressure in the jacket at nominally 150 pounds. The caustic soda first attacks and dissolves the fabric. This is followed by devulcanization. At the end of the treatment, the stock is dumped into wash tanks and the majority of the soda washed out of the mass. The washed stock is riffled to free it of all traces of chemicals and sand and dried on screens as in the acid process.

Milling Reclaims

Elaborate and careful milling procedure has been developed in the reclaiming industry to meet the insistent demands of rubber goods manufacturers for improved reclaims. The dry, devulcanized product from the screens is first thoroughly broken down on warm mill rolls. It is then passed through a heavy forcing machine or strainer. This machine is a powerful tubing machine

of extra rugged construction with large water cooled worm. In place of the customary die outlet there is a heavy gate-like fixture supporting removable squares of fine mesh wire cloth, through which the plastic milled stock is forced or strained. The rubber emerges from the strainer as a mass of small cords entirely free from metal, grit, wood or undigested fiber.

The next and final step is refining the strained rubber. This operation may be done on a calender but a refining mill is ordinarily used. A refiner is a heavy 2-roll mill with short hardened steel rolls of large diameter. The reclaim is passed between the tightly closed rolls, coming out as a sheet not over 0.005 inch in thickness. If any dirt has come through the preceding stages of the processing, it is here discovered working toward the ends of the rolls where it can be removed as tailings. The refined reclaim may be batched as slabs, or the sheet rolled in sausage form as it rises on the front roll of the refiner. In any event it is then bagged for shipment.

Process Control

From scrap to finished product, each step in the manufacture of reclaimed rubber is the result of technical research. All its stages are controlled by routine chemical and physical supervision. The critical tests determine (1) specific gravity, color and grade of scrap as the basis of standard quality of the product; (2) the strengths of acid or alkali; (3) temperatures of devulcanizing and drying; (4) thoroughness of washing free of chemicals; (5) elimination of metal, grit, fiber, etc.; (6) gravity, tensile properties of products and the dielectric strength of reclaims for insulating purposes.

Inspection and Quality

It is customary as an ultimate check on the product to depend, for final decision in the matter of quality, upon an unbiased inspection department. This is organized independently of the production division. Its function is to give responsible approval to the stocks produced before shipment. The system is to compare each lot of reclaim, as it comes through, with standard samples,

Pequanoc Rubber Co., Butler, N. J.

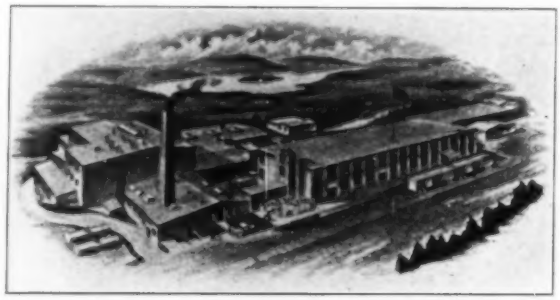
making chemical and physical tests to determine essential deviations from the specific standard quality shown by the prepared samples. These methods are the result of many years of development in the reclaiming industry and have transformed the uncertain shoddies of years ago into the scientific reclaims of today.

Typical Reclaims

The superior grades of reclaim are manufactured from pneumatic tire casings and inner tubes. These products are graded by their rubber content, plastic quality, gravity and tensile properties. Some are designed for special uses, others for general compounding.

While shoe reclaim has been, to a large degree, superseded by tire reclaims for general use, it is much esteemed because of its plastic quality for insulation, shoe uppers, calendered coats on auto topping and for spreader work in proofing.

The closeness to standard with which the same reclaim analyzes and tests in lot after lot is most remarkable considering the variety in the original scrap sorted. This uniformity in quality has made reclaims indispensable to the rubber goods manufacturer, because they function dependably in compounding capacity and physical properties. At present, these qualities are particularly valuable in view of the radical advances in the prices of crude rubber, and the economy that can be effected by the intelligent use of reclaim. A high grade automobile tire stock



Appleton Rubber Co., Franklin, Mass.

will test about 125 cured gravity and sell at less than 10 cents a pound. Its rubber content, in the neighborhood of 60 per cent, evidently makes its intrinsic worth and economy of great importance.

Selection of Reclaims

In selecting a reclaim for a purpose, some points to consider are: its quality, indicated by its rubber content, gravity, compounding and plastic ability, and physical tests. These points, in detail, are comprised in: (1) its analysis; (2) physical tests of tensile properties; (3) freedom from grit or other impurities; (4) its milling or plastic quality; (5) specific gravity, etc.

The relative economy of reclaim, as of any other compounding ingredient, is shown by its unit volume cost. That is to say, the cost of its volume corresponding to unit gravity at the given price per pound. This figure is its true comparative cost and is found by multiplying the pound price by its specific gravity.

For example, reclaim at 10 cents a pound and gravity 125, has a volume cost of 12½ cents. In the case of crude rubber, volume cost is virtually the same as pound cost because rubber is essentially unit gravity.

Neglect to make volume cost comparisons is a prolific source of loss to the manufacturer and compounder, who fail to appreciate the signification of these comparisons in the choice of reclaims and other ingredients, or of mixed stocks in the make-up of his goods.

ELASTIC WEBBING SIZES STANDARDIZED

The Division of Simplified Practice of the Department of Commerce has adopted seven widths and three sizes of rubber as standards for boxed elastic webbing, while four widths and five sizes were eliminated.

The sizes retained in use are Nos. 26, 30 and 34, and the widths recognized as standard are ⅛, ¼, ⅜, ½, ¾, 1 and 1¼ inch. The reduction will become effective October 1 next and will remain in effect for one year, during which operation of the standards will be observed.

During the sessions of the conference a standing committee was organized with Julius B. Smith, of the American Mills Co., Waterbury, Connecticut, as chairman.

REPLETE WITH INFORMATION FOR RUBBER MANUFACTURERS.—H. C. Pearson's "Crude Rubber and Compounding Ingredients."

The Crude Rubber Situation

Government Urges British to Abandon Restriction—More Reclaim Will be Used—Payment of War Interest by High Priced Rubber is False Reasoning—Restriction Compared to American Tariff on Imports—Opinions of Rubber Men

THE recent advance in the price of crude rubber has been so conspicuous that it has evoked much comment from the daily press, and opinions regarding the present situation in the rubber industry are being freely expressed.

That the views of United States citizens on the Stevenson restriction measure—usually represented as responsible for the present crude rubber conditions—may differ from those of the British public is only to be expected. However, some of the editorials appearing in leading American journals are noteworthy as showing a tendency to fairness, and a disposition to look at so broad a subject from all sides.

These editorials were apparently called forth by a report released by the Department of Commerce in which a special study had been made of the growth, supply, importation and prices of crude rubber. In this report Secretary Hoover urges the British Government to abandon the restriction scheme, "this combination in restraint of international trade," predicting that otherwise "a world rubber famine will be precipitated," and stating further:

"A careful investigation into the future world demand for rubber undertaken by the Rubber Association of America, with the cooperation of the Department of Commerce, indicates that this shortage is likely to be felt by 1928 or 1930, and may lay a heavy burden on the American consumer."

According to Secretary Hoover, the investigation by the Department of Commerce was necessary "to the end that we may find means to stimulate competitive production as well as to provide measures by which our consumers may set up such counter action as will protect them." Estimating our rubber imports in 1923 at a value of $185,000,000, or about 72 per cent of the whole world's production, Secretary Hoover considered that the amount of rubber used by American factories would this year reach a total of $400,000,000. After the publication of the report, and following a conference with certain members of the Rubber Association, Secretary Hoover also urged the greater utilization of reclaimed rubber, stating that by this means American imports of crude rubber may be reduced by 20 per cent.

The later misconstruing of the purpose of the report by certain Washington newspapers is thus referred to by the *Wall Street News* in an editorial entitled "A Far-Fetched Idea About Rubber":

"The report of the Department of Commerce was a document discussing the facts of rubber production and the statistics of supply and demand. It was produced under pressure from consumers and importers who had been aroused by the restricted supply and rising trend of prices. To stretch the meaning of the department's findings so as to apply proceeds of rubber sales directly to payment of the British war debt to the United States, was going far beyond the province of the survey.

"The 'extra profits' to be derived from the production of rubber by private British capital will no more be applied to war debt and interest payments than would the profits of an export shipment of steel by the United States Steel Corporation be used to retire Liberty bonds.

"The British government does not own the plantations. The revenue which the British government obtains from these plantations comes solely from taxation of the product thereof."

No relief in the rubber situation can be expected from the Dutch rubber growers, according to the *Journal of Commerce*. While the production of rubber on Dutch plantations doubled in the last three years, having supplied last year about 185,000 tons, out of a total world production of approximately 450,000 tons the Dutch growers are not going to unduly increase their output so as to in any way injure their plantations.

"We are not going to bleed our plantations," said one prominent Dutch rubber grower.

"It takes about seven years to grow rubber trees, and the present output is easily being disposed of," he continued. With the Dutch rubber output for the next year placed at 200,000 tons, a gain of about 15,000 tons from the previous year, it will still have very little effect on the market, it was stated. The shipments of Dutch rubber during the first three months of this year amounted to about 32,100 tons.

The *Journal of Commerce* continues in an editorial entitled "Soaring Rubber Prices":

"It is worse than misleading—it is altogether incorrect—to assume that the difference between what had to be paid for rubber last year and what is being paid this year—represents a clear profit going into the hands of rubber producers. The Stevenson restriction plan would never have been urged nor adhered to in the face of many difficulties if the rubber plantations had been able to pay their way.

"In view of the facts it seems very far fetched to conclude that 'extra profits' from only one of the sources of British wealth—the rubber plantations of the East Indies—will be sufficient to cover all of that nation's future repayment of its war debt to the United States."

On the other hand the *New York Times* says in part: "The results of the expert study by the Department of Commerce show that Great Britain controls rubber plantations in the East Indies the product of which will alone be sufficient to pay off her war debt to this country. We have to buy abroad the raw rubber of which we consume more than any other nation. The price has rapidly been pushed up in recent months, owing partly to a scheme to limit production which has been put into effect by the British Colonial Office. . . . The situation respecting our supply of rubber is thus only one more argument for the need of taking steps to assure in the Philippines a régime under which the resources of the islands can be enlarged and utilized in a way to benefit all."

According to the *New York Commercial*:

"When Britain can no longer control the raw rubber market the restrictions on plantation rubber will be abandoned. If maintained they can only serve to stimulate the production of rubber outside British possessions.

"In order to be consistent Americans should not blame Britain for seeking to control the rubber market after a manner to help her colonial rubber producers—and incidentally herself. Protection to American industries is the policy of the United States. That protection takes the form of a tariff on imports which, were they to come in duty free, would drive our manufacturers out of business. The plan has worked at the expense of manufacturers abroad and the industrialists of this country are prosperous as a consequence. The difference between the British and the United States plans is in method not result. Both work for the good of producers at home and at the expense of people abroad.

"If it were possible for the United States to put an export duty on cotton the resulting high prices would greatly aid the

South. Such a duty is forbidden by the Constitution. Were it constitutional it would be perfectly legitimate for cotton growers to ask for it although the sum total of its effect would be to stimulate the growing of cotton in other countries. And that is what the export restrictions that Britain has imposed on raw rubber from her colonial possessions will do."

"The Stevenson restriction scheme," says the *New York Sun*, "is undoubtedly ingenious. It has brought about the present prosperity of the rubber growers. It has proved, however, too inflexible; it has led to soaring markets like the present one, and in the end it may prove something of a boomerang. For the United States, which produces no rubber, consumes approximately three-quarters of the entire supply. Just as the British have been encouraging cotton growing in their colonies since the boll weevil reduced the American output of that staple, so our own Department of Commerce has been considering the possibility of encouraging rubber plantation in the Philippines or elsewhere for our own protection."

In view of the present condition of affairs, various remedies are being proposed. Certain American manufacturers and brokers have declared that the only workable plan just now is for American buyers to adopt a new purchasing policy, whereby orders should be placed sufficiently far ahead to enable producers to operate at a higher level. In commenting on the current situation, H. Stuart Hotchkiss, vice-president of the United States Rubber Co., says:

"I am convinced that we shall see high priced rubber for some time and I am positive that if conditions do not radically change, we shall see a shortage of rubber in a few years. We need some plan that will keep the bottom from being knocked out of the rubber market, yet stabilize it so that investors will get a fair return."

Sir Eric Geddes, chairman of a great rubber company, which he describes as "the second largest producer in the world," is quoted as saying that prices of rubber have fluctuated from 17 to 75 cents in a few months and that America 'should take steps to eliminate present conditions in the industry, or grow her own rubber."

The London correspondent of the *Journal of Commerce* also says: "It should be remembered by those who are predicting a state of famine in crude rubber that the very fact that prices are at a higher level ensures increased supplies. A 10 per cent increase of permitted exports came into operation on May 1 and it is confidently expected that further releases will, if the price level remains above an average of 18 pence, follow on August 1 and again on November 1, which would bring exports up to the 85 per cent basis. This rate of increased output will, it is believed, provide sufficient rubber during 1926 to cover increased requirements and allow a small margin for replenishing stocks."

Demand for rubber products continues without abatement, says W. O. Rutherford, president of the Rubber Association. "The scope of the rubber industry's market and the intensity of demand is largely of self-creation. By ingenuity and vision the industry has developed many new uses for rubber. It has supplanted other basic materials with rubber.

"The only cloud on the rubber industry's horizon at present is the crude rubber situation. That I think will be dispelled before long. The rubber industry demonstrated during the period of depression great resourcefulness. It emerged with broader vision and more scientific methods of distribution and production. It can be depended upon to clarify the present crude rubber problem with equal dexterity. This, in any event, is purely an inter-industrial matter and an exchange of opinion and facts will rectify the balance."

AMERICAN EXPORTS OF RUBBER SOLES AND HEELS HAVE BEEN estimated for the first quarter of the present year as follows: January, $84,241; February, $59,445; and March, $88,321.

Rubber Trade Inquiries

The inquiries that follow have already been answered; nevertheless they are of interest not only in showing the needs of the trade, but because of the possibility that additional information may be furnished by those who read them. The Editor is therefore glad to have those interested communicate with him.

NUMBER	INQUIRY
632	Manufacturers of small rubber rolls.
633	Machine for breaking up hard rubber scrap.
634	Information regarding hard rubber sponge.
635	Names of firms handling re-built tires.
636	Disposal of rubber scrap.
637	Vulcanizing apparatus for curing tennis shoes without discoloration.
638	Makers of play balls.
639	Information on the cultivation and gathering of rubber.
640	Machine for rolling beads on dipped goods.
641	Manufacturers of rubberized fabrics suitable for coats.
642	Firms doing calender work.
643	Manufacturers of dipped goods.

Foreign Trade Opportunities

Address and information concerning the inquiries listed below will be supplied to our readers through the Foreign Trade Bureau of The India Rubber World, 25 West 45th Street, New York, N. Y.

NUMBER	COUNTRY AND COMMODITY	PURCHASE OR AGENCY
15,076	Syria—Rubber goods	Purchase and Agency
15,088	Mexico—Chemicals for use in compounding rubber	Purchase
15,110	Belgium—Belting and packings	Purchase and Agency
15,123	Mexico—Toy balloons	Sole Agency
15,166	Hungary—Overshoes and arctics; sanitary and surgical rubber goods	Purchase and Agency
15,167	England—Bathing caps and shoes	Agency
15,168	India—Rubber sundries and specialties	Purchase and Agency
15,169	India—Motor tires and tubes	Agency
15,170	Czechoslovakia—Bathing caps, waists belts, arctics, galoshes, and sanitary and surgical articles	Agency
15,171	Austria—Overshoes and galoshes	Agency
15,172	Germany—Rubber goods	Agency
15,173	Canada—Toy and advertising balloons	Agency
15,174	Germany—Belting and packings	Agency
15,179	Canada—Belting and rubber boots	Agency
15,190	Belgium—Packings	Agency
15,205	Germany—Automobile tires	Agency
15,222	Egypt—Garters, suspenders and handkerchiefs	Agency
15,262	Rumania—Rubber shoes and arctics	Purchase and Agency
15,369	Canada—Rubber goods and novelties	Agency
15,455	Czechoslovakia—Shoes and overshoes	Agency
15,469	Norway—Tires for trucks and automobiles	Agency
15,471	Netherlands—Medical rubber goods	Agency
15,472	Canada—Rubber sundries	Agency
15,512	Morocco—Rubber coats	Purchase and Agency
15,518	Cuba—Rubber-soled canvas shoes and rubber heels	Agency
15,527	Mexico—Suspenders	Purchase
15,528	Rumania—Balata belting	Purchase and Agency
15,569	Yugoslavia—Surgeons' gloves, aprons, etc.	Agency
15,594	Greece—Automobile tires	Agency
15,596	Germany—Rubber toys	Purchase

Foreign Trade Circulars

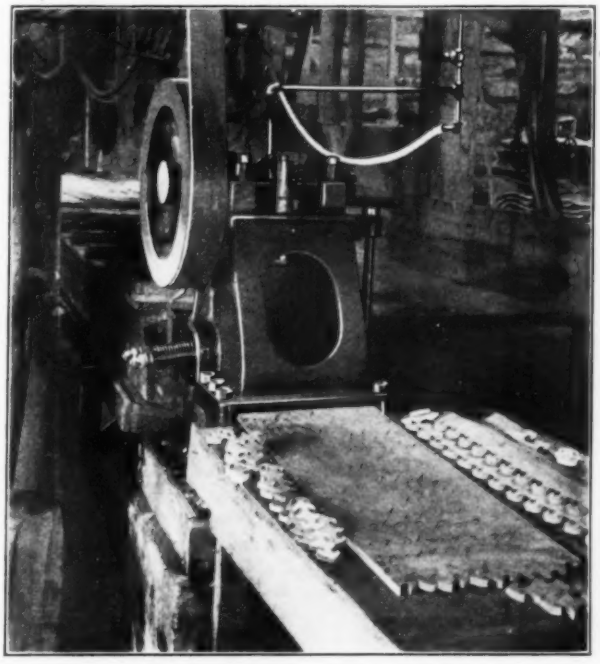
Special circulars containing foreign rubber trade information are now being published by the Rubber Division, Bureau of Foreign and Domestic Commerce, Washington, D. C. The publications which give details of the rubber industry in some one country are marked with an asterisk.

NUMBER	SPECIAL CIRCULAR
*857	"March Imports of Golf Balls."
*858	"March Imports of Rubber Tires."
*860	"Dealers' Stocks of Auto Tires, April 1, 1925."
861	"Notes on Foreign Markets for Rubber Reducing Corsets."
*874	"Canadian Exports of Rubber Footwear during the First Quarter of 1925."
875	"Tire Exporters' Weekly News Letter."
877	"Retail Tire Price Increases in France, Italy and Belgium."
*880	"Retail Tire Prices Increase in Switzerland."
*881	"Retail Tire Prices Increase—United Kingdom."
*882	"House Bill No. 304—Porto Rico."
883	"Tire Exporters' Weekly News Letter."
*884	"Retail Tire Prices in Denmark."
*885	"German Tire Exports, First Quarter, 1925."
*887	"Retail Tire Prices in Sweden."
888	"Export Trade Notes on Rubber Cloth and Clothing."
889	"Comparative Tire Exports from United States, Canada, United Kingdom, France, and Germany during First Quarter, 1925."
*890	"April Imports of Golf Balls."
*891	"April Imports of Rubber Tires."
892	"Tire Exporters' Weekly News Letter."
*893	"British Imports of Rubber Footwear, First Quarter, 1925."
*894	"Italian Tire Exports, First Quarter, 1925."

Interlocking Rubber Tiling

How It Is Made—Tile Molds—Curing and Finishing—One and Two Unit Designs—Methods of Laying—Interlocking Tile for Steamships

THE manufacture of interlocking rubber tiling was begun about 35 years ago. Designs, stocks, and processes of manufacture and attachment to floors of all kinds have been so thoroughly perfected since then that for certain jobs no other floor covering possesses so many desirable characteristics. It is very durable, it is sanitary because it does not absorb moisture or stains, and is readily cleaned by washing. It is not slippery and forms a noiseless floor that is pleasant to walk on and will last 25 years and more, even where the traffic is severe. It is used in public buildings, schools, churches, libraries, court rooms, clubs, hospitals, institutions, theaters, steamships and railway cars.



Punching Interlocking Tiles

Manufacturing Tiling

Making interlocking tiling is not a very complicated process and although it requires experience and practical knowledge, special machinery is not necessary. The equipment needed includes chiefly heavy grinders or mixers, a hydraulic platen press to take molds 24 by 24 inches, a small power punch press, and several tables on which to work.

Tiles are usually made ⅜-inch thick in various colors as white, black, light or dark gray, red, blue, buff, light or dark green and brown.

The typical formula for interlocking tile comprises chiefly mineral fillers and pigments with sufficient gum and resinous materials to bind them together when the stock is consolidated and cured under heavy pressure. Reclaimed rubber is used only in block tiling.

The cured tile possesses very little of the yielding character of rubber goods and resembles soft wood even to the extent that when laid upon the floor, joints or other inequalities due to the underlying surface can be smoothed and leveled off with an ordinary hand wood plane.

The mixing is done on heavy mills, the entire batch of about 50 pounds being mixed at once. After the compound is thoroughly mixed it is sheeted direct from the mill, to the thickness required. These sheets are cut into sheets of suitable width and passed on to the punch press where the mold blanks are died out the shape of the tile but a trifle smaller. The press is equipped with an automatic feed and dies out the tiles that are delivered to a table back of the press, where they are separated and placed in the curing molds.

Tile Molds

Molds are made of flat steel plates with cavities cut right through and an overflow channel is chipped around the edge of each cavity.

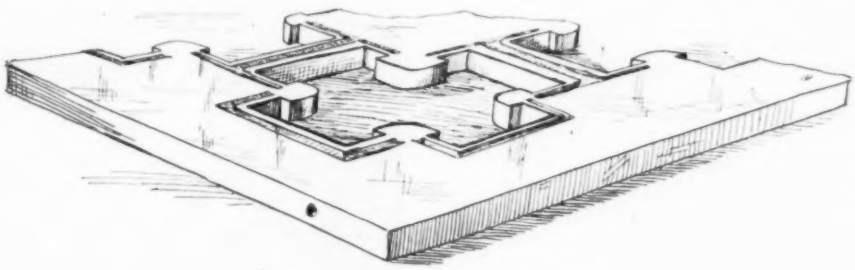
Curing

The mold is placed on a flat sheet iron plate and dusted with talc. The cavities are filled with the blocked-out pieces of tile stock, dusted, and covered with a piece of sheet iron. The mold is then put into the press. After each deck of the press has been filled the platens are closed by hydraulic pressure and the tiles cured about fifteen minutes. The molds are removed to a table which has an open top and the tiles are pushed out with a piece of wood. Some firms have a practice of brushing over the hot empty mold cavities with soapy water before they are filled.

Trimming and Finishing

The vulcanized tiles then go to the trimming tables where girls trim the fin from the edges with narrow-bladed knives and the tiles are ready for shipment.

In order to produce uniform tiling some manufacturers check its weight by supplying the pressman with a small balance scale, on one pan of which is placed a sample tile or its equivalent weight. The pressman thus checks each piece before he puts it in the mold.



Mold Cavity for Interlocking Tiles

Designs

The illustrations show examples of one-unit and two-unit designs. One-unit tiles require only one kind of mold as each tile fits and interlocks with another of the same form. A two-unit design requires two shapes of tiles for interlocking. This form lends itself to more elaborate decorative schemes.

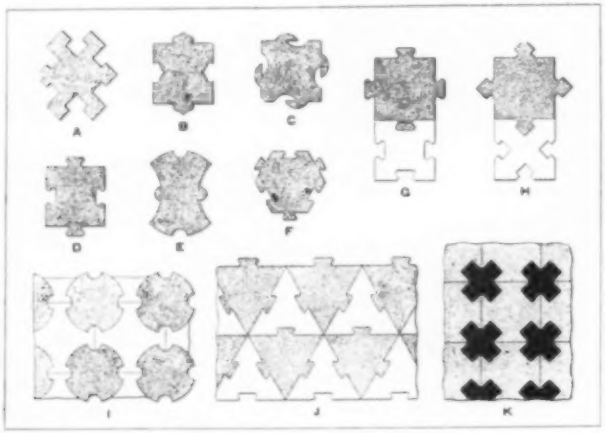
Rubber interlocking tile should be of a one-unit design (sometimes called hermaphrodite) for the sake of economy. If the two

units (male and female, as sometimes called) are cut out by the die system the waste is too great. By this is meant that if the male unit is wanted in a different color than the female unit (which would naturally be the case unless the design is reversed in a checkerboard style in some other room) twice the required footage would have to be cut out in order to get the required design. The two opposite units would have to take up shelf room until some customer came along, and it would be a matter of luck if a sale could be made within a year at reduced prices to release the capital involved.

One and Two-Unit Designs

Referring to the accompanying illustration, A is the Crab-lock which has been used extensively by the former Dreadnought Floor Co. It is one of the best one-unit interlocking rubber tiles made by the die system. B is a one-unit which has been used only to a small extent, and C is a one-unit known as the Beaver-lock. This design was popular at one time when used by the former Beaver Tile Co.

D is a one-unit known as the Keystone, manufactured by several concerns, mostly by the mold system. E is a one-unit which has not been much used. F is a single unit known as the octagon, which has been used to a fair extent, and probably is the oldest design with fair popularity, this being a molded tile.



One- and Two-Unit Interlocking Tile Designs

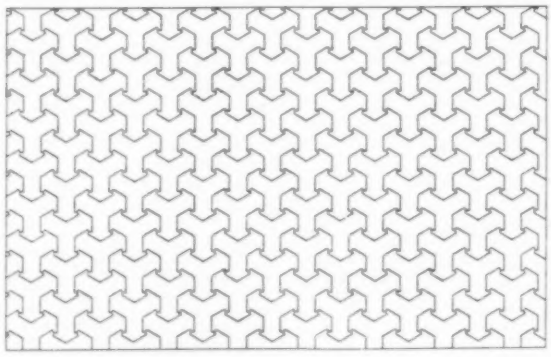
G is a two-unit (sometimes called male and female) used a great deal at the present day by many concerns that manufacture it by the mold and also by the die system. H is a two-unit, or Kennedy design, used a great deal by that concern a number of years ago. I is the two-unit circle design used by the older rubber companies which no longer manufacture it to any great extent.

J is the triangle two-unit, which is one of the many designs manufactured when rubber tile was first used with the oblong and lozenge shaped tile, having been installed on the steamship St. Louis in 1897.

K is the two-unit cross design which has had a fair popularity, having been laid in 1912 in the American Express Building on Church street, New York, N. Y., and still is in good condition. The larger tile of the two units is the male. In G, H, I, and J the stippled tile is the male and the white tile is the female.

Methods of Laying Interlocking Tile

Interlocking rubber tiles lock into each other and hold together as one sheet. They are cemented to cloth which is tacked to the floor on a felt backing. Laying the rubber tile directly on the felt backing, which is cemented to the underfloor, may prove satisfactory where the temperature stays at an even level, but where the interlocking rubber tile is laid directly on a wood backing the possibilities of cracking are very great, especially where there is heat and a change of temperature from one extreme to the other. The New York and New Jersey ferry boats furnish good examples



One-Unit Interlocking Tile Design

of this. Expansion and contraction are best taken care of by a felt and cloth preparation which is tacked to the wood floor.

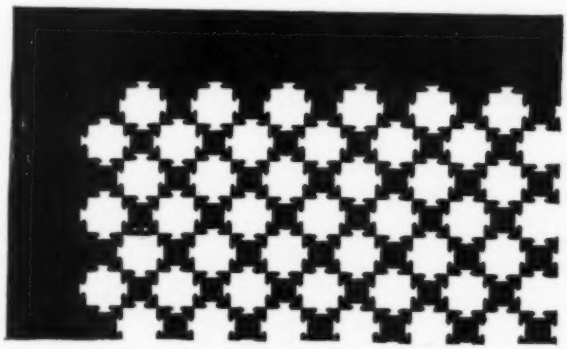
Interlocking Tile on Shipboard

Interlocking rubber tile is best suited to ships, where the constant buckling, rolling motion, and stretching strain are very great and the rubber flooring will expand and contract accordingly. On vessels where wooden decking is used, a felt, paper and cloth is necessary, regardless of whether interlocking, lap tile, or butt tile is used, in order to guarantee that the floor will remain down. All pitch should be removed from the decking joints and marine cement replaced. The heat from the boiler room and a high temperature will soften the pitch and cause a great deal of trouble when it cools. As a rule the decking is made of planking from three to six inches wide. This should first be "dubbed" off with a lip adze and then the entire surface gone over with a sanding machine, using coarse paper to get a uniform smoothness.

On concrete, cloth is not necessary, the only requirement being that it must be bone dry, otherwise the cement will not adhere to the floor, the weight of which is insufficient to hold it down.

Samples of interlocking rubber floor have been laid at different exhibitions throughout the country without the use of cement to fasten it to the floor. However, tile so laid on steamships may become dislodged by constant mopping.

There are other designs of interlocking tile on the market, but they have not been used to any great extent, being merely discontinued experiments. Some rubber concerns have had a means of locking with wire eyelets, other with metal springs, and many with laps similar to the wood tongue and groove.



Two-Unit Interlocking Tile Design

A good example of the beauty of interlocking rubber tile still exists in the corridor at St. Johns College in Brooklyn, New York. This tile was laid eighteen years ago, and has lost none of its original beauty.

Plantation Rubber in the Middle East

Distribution and Ownership of Planted Area—Capital Investment—Production—Effect of Restriction on Prices and Stocks—Planting and Production Costs—Earnings—Future Potential Output and World Consumption

THE plantation rubber industry in the Middle East originated from seeds of *Hevea brasiliensis*, otherwise known as Pará rubber, collected in Brazil by Sir Henry Wickham in 1876, germinated in Kew Gardens, London, and sent from there to the East. All other rubbers have practically disappeared from cultivation.

David M. Figart, special agent of the Crude Rubber Section, in *The Plantation Rubber Industry of the Middle East*, published by the Department of Commerce, surveys the situation regarding planted areas and ownership, production, costs, etc., as follows:

Distribution of Area and Ownership

The accompanying map shows the location of the plantation rubber producing countries of the Middle East, together with the acreage percentage contributed by each. It will be noted that 69 per cent of the acreage is domiciled in British possessions (British Malaya, Ceylon, India, Burma and British Borneo), 29 per cent in Netherlands India (Sumatra, Java and Dutch Borneo), and 2 per cent in the French colony of Indo-China.

The following table shows the actual acreage planted in the different states and the area tappable at the present time.

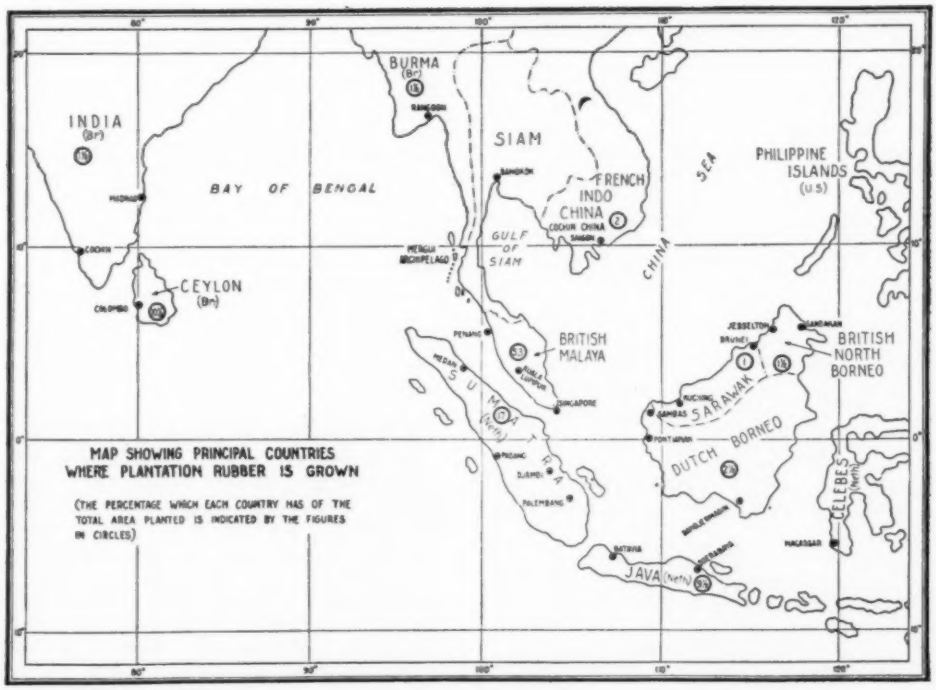
AREA PLANTED AND TAPPABLE,[1] TOTAL MIDDLE EAST

Countries	Total Area Planted[2] Acres	Area Tappable[3] Acres
Ceylon	445,000	423,000
India and Burma	124,000	119,000
Malaya	2,275,000	2,061,000
North Borneo, Sarawak and Brunei	117,000	87,000
Total British	2,961,000	2,690,000
French Indo-China	86,000	68,000
Netherlands India	1,249,000	1,092,000
Total other	1,335,000	1,160,000
Total Middle East	4,296,000	3,850,000

[1] Includes both European and native-owned rubber.
[2] To end of 1923.
[3] In 1924; 5 years old or over.

It will be noted that the total planted area in British territory is 2,961,000 acres. In addition British owned plantations in Netherlands India aggregate 269,000 acres; making 3,230,000 acres, or 75 per cent of the total planted area of the Middle East under British control.

Of the total area planted in the Middle East two-thirds are



Courtesy Department of Commerce

The Plantation Rubber Producing Countries of the Middle East

owned by European and American capital. There has been a steady though gradual increase in the percentage owned by natives.

Capital Investment

Following is an approximation of the capital invested in rubber plantations in the Middle East and its origin, stated in American currency:

	Amount	Per Cent
Great Britain	$505,000,000	57.6
Netherlands	130,000,000	14.8
France and Belgium	30,000,000	3.4
Japan	42,000,000	4.8
United States	32,000,000	3.7
Shanghai	$14,000,000	1.6
Denmark	11,000,000	1.3
All other, including native-owned areas	112,000,000	12.8
Total	$876,000,000	...

Plantation Production

The following table shows the net exports in long tons of plantation rubber from the different countries of the Middle East, with the percentage contributed by the British colonies:

PRODUCTION (NET EXPORTS) OF PLANTATION RUBBER, TOTAL MIDDLE EAST

	British Possessions							Grand Total Middle East	British Share of Grand Total Per Cent
Years	Ceylon Tons	British Malaya Tons	India and Burma Tons	British Borneo Tons	Total British Tons	Netherlands India Tons	French Cochin-China Tons	Tons	
1905	70	104	....	....	174	....	....	174	100
1906	145	432	....	....	577	....	....	577	100
1907	250	905	....	2	1,157	....	....	1,157	100
1908	390	1,402	....	4	1,796	....	....	1,796	100
1909	681	2,698	....	7	3,386	....	....	3,386	100
1910	1,522	5,713	....	34	7,269	....	....	7,269	100
1911	3,061	10,895	332	95	14,383	....	....	14,383	100
1912	6,628	20,540	643	277	28,088	2,025	....	30,113	93
1913	11,325	33,213	1,040	608	46,186	5,535	....	51,721	89
1914	15,336	46,430	1,343	883	63,992	8,970	191	73,153	87
1915	21,787	70,516	2,161	1,631	96,095	17,811	371	114,277	84
1916	24,334	97,837	2,781	3,058	128,010	30,443	540	158,993	81
1917	32,296	134,788	3,992	4,312	175,382	44,889	916	221,187	79
1918	20,665	107,691	4,377	4,193	136,926	43,345	529	180,800	76
1919	45,010	199,545	6,554	6,375	257,484	88,189	2,901	348,574	74
1920	39,532	174,322	6,376	5,851	226,081	75,522	3,068	304,671	74
1921	39,342	151,001	5,305	5,311	200,959	72,227	3,560	276,746	73
1922	46,694	212,380	4,854	7,661	271,589	102,171	4,472	378,232	72
1923	37,111	183,812	6,417	10,094	237,434	137,158	5,146	379,738	63
1924[1]	37,338	152,320	7,161	8,208	205,027	175,298	6,378	386,703	53

[1] Estimated; subject to later revision.

It will be noted that during recent years the proportional percentage of plantation rubber furnished by British territory has been decreasing gradually as other producing regions came into bearing. The reduction of the exports of the British possessions from 72 per cent of the total for the Middle East in 1922 to 63 per cent in 1923, and to an estimated 53 per cent in 1924 was due to the restriction on exportation imposed by the British Colonial Office.

During the last two years increasing quantities of wet native plantation rubber have been shipped from Netherlands India, mostly to British Malaya, where it was remilled and reshipped to consuming markets. As the net exports of British Malaya are determined by subtracting the imports (largely wet rubber) from the gross exports, an allowance for moisture in native rubber would make the figures for Malaya much higher and those for Netherlands India lower than those shown in the table above; also the British percentage would be increased accordingly.

Effects of British Restriction

The march of economic events—increasing crude rubber production, decreasing world demand and falling prices—which induced the British Colonial Office late in 1922 to adopt the Stevenson plan of restriction of crude rubber exports according to average price obtained; the basis of that plan and its operation, are so well known to readers of THE INDIA RUBBER WORLD that recapitulation here seems unnecessary. A brief summary of the effects of restriction on exports, prices and stocks will suffice.

Statistics show that there has been no appreciable difference in the exports of the Middle East of 1922, 10 months of which were without legislative restriction, and those of 1923 and 1924, with restriction in effect in the British colonies, the totals being respectively 378,000, 380,000 and 386,000 tons. The loss due to restriction in exports from British Malaya and Ceylon is counterbalanced by increased production in Netherlands India. Had the British colonies produced and exported to their capacity in 1924, it is estimated that 100,000 more tons would have reached the markets of the world during this year from this source.

Average Rubber Prices

The following table gives the average quarterly price of ribbed smoked sheet in New York from the first quarter of 1915 to the closing quarter of 1924. It will be noted that up to the last quarter of 1920 the average quarterly price did not fall below 30 cents a pound, and that the drop from that time coincided with the general depression in business and the consequently reduced demand for rubber.

AVERAGE NEW YORK PRICE FOR RIBBED SMOKED SHEET

	Average Price Per Pound			
Years	January-March Cents	April-June Cents	July-September Cents	October-December Cents
1915	65½	61⅓	60½	68⅓
1916	88½	71½	59	69¾
1917	81	79⅔	66⅙	59½
1918	56⅙	65¼	61½	55½
1919	53¾	45	43⅜	52¼
1920	50¾	40⅝	30	19⅛
1921	18⅛	15½	14⅛	17⅝
1922	16	15½	14½	23⅜
1923	34⅛	29½	28	26⅞
1924	24½	20½	24¾	34½

Rubber Stocks

Shipments of rubber from world producing centers during 1923 were less than world consumption, and the same was undoubtedly true in 1924. The difference was made up by drawing on the accumulation of stocks of dealers and manufacturers which had been piled up during the business depression. The world's stocks have now been reduced to a dangerous minimum, and this condition, together with greatly increased activity in rubber manufacturing in both the United States and Europe, has forced the price up to a higher level than has been the case since the business depression began in the latter part of 1920.

Stocks on hand in the United Kingdom at the close of 1924 were 29,500 tons, the lowest record since the end of August, 1920, and a decrease during the year of nearly 31,000 tons. Stocks in the hands of dealers and manufacturers in the United States at the same date amounted to 57,700 tons, a decrease of about 19,000 tons during the year—or 50,000 tons for these two countries alone. World consumption during the year 1924 probably reached at least 475,000 tons and total exports from all producing centers possibly 415,000 tons. Consumption in the United States for 1924 has been placed by reliable commercial authorities at 335,000 tons, against 305,000 tons for 1923, an increase of 30,000 tons.

Planting Costs

There are many variables in the cost of planting and maintaining an acre of rubber to the producing stage in the Middle East. Among them may be mentioned the purchase price of land, the density of tropical jungle to be cleared, the investment in buildings and equipment, variations in wages and in the efficiency of different races, and a score of minor items. The cost today of planting

and maintaining an acre of rubber to the producing stage on a well-managed, foreign-owned estate would vary from $150 to $325, United States currency. To this must be added interest during the growing period, which would probably bring the cost range between $200 and $400 per acre.

Production Costs

Production costs show great divergence because of variation in location, yield per acre, cost of labor, health conditions, efficiency and management. Comparison of available figures is difficult because of differences in accounting methods, especially as regards such items as overhead, selling costs, depreciation, amortization of the life of the plantation, etc. Furthermore, years of low prices make for economy, perhaps some of it at the expense of the future; while years of high prices stimulate extravagance.

The average f. o. b. cost (Middle Eastern ports) for 1922 (a year of severe economies) of 129 estates in Ceylon, Malaya and Netherlands India was 12.7 cents, United States currency. This does not include amortization, head office, shipping, marketing and some other costs. Again, the published average all-in cost for 1922 of 13 Ceylon companies was 13.4 cents; for 60 Malaya companies, 15.1 cents; for 18 Netherlands India companies, 17.4 cents; and for 12 Borneo companies, 16.5 cents. This included freight, insurance to consuming markets and head office expenses.

Yields and Returns

"Operating cost per acre" is in most instances a better basis of cost accounting than "cost per pound." Cost per pound varies with the yield per acre, while operating cost per acre should be approximately the same, given similar topographical and labor conditions, regardless of the yield. This being true, the larger the yield per acre the lower the production cost per pound.

Assuming favorable soil and climatic conditions, and the desire to conserve young growth by protection against disease and overtapping, a yield of 400 pounds or more per acre can be reached by the time the trees are 10 years old and maintained for a number of years thereafter. When young growth is not adequately conserved and where physical conditions are unfavorable the 400-pound yield may not be reached and the producing life of the plantation may be shortened.

A careful analysis of cost items with adequate allowances for the delivery of rubber to consuming markets, including amortization but excluding profit taxes, corporation taxes and bonuses, seems to indicate that fairly well managed plantations with an output of about 400 pounds per acre under favorable conditions would be covered and perhaps earn small profits by a realization of 16 to 17 cents per pound, United States currency, delivered in New York, and these costs might be lowered by larger unit operations.

The additional return necessary to yield a stimulative profit of, say, 15 per cent on the capital invested would amount to 7½ cents a pound for the comparatively few plantations with a capital cost as low as $200 per acre and 15 cents for plantations with a capital cost of $400 per acre. The larger class of plantations with capital costs between these extremes would, of course, net returns of 7½ to 15 cents.

Earnings of Plantation Companies

Earnings for a list of representative companies, numbering 17 for 1909 and gradually increased to 52 for 1922, show that over this 14-year period an annual average profit of 26 per cent on the issued capital was earned. The issued capital (which averaged over, rather than under, the actual capital spent) was earned three and a half times. During the greater part of this period prices ruled high; on the other hand, much of the area was immature or had not reached the full bearing stage.

Dividends averaging 22 per cent per year were paid—over three times the issued capital. During the depression 21 out of 51 companies paid dividends in 1920; in 1921, 22 out of 51; in 1922, 46 out of 51.

Potential Output of the Middle East

The potential future production from this, the greatest rubber producing area, will depend upon three factors: (1) Acreage now planted but not yet in bearing; (2) Future planting; (3) Government restrictions on output.

Rubber is not an annual crop. It requires from 4 to 6 years to come into bearing and from 10 to 12 years to reach the so-called full bearing stage. Little planting has been undertaken during the last three years. Of the approximately 4,300,000 acres planted in the Middle East about 3,800,000 are of tappable age, and, subject to other conditions, the output could be expected to expand at least in this proportion. Calculation of future potential output, based on the assumption of full exports and the maturity of the present planted areas, would indicate approximately the following:

ESTIMATES OF FUTURE POTENTIAL OUTPUT OF PLANTATION RUBBER FROM PRESENT PLANTED AREA, TOTAL MIDDLE EAST

Years	Tons	Years	Tons
1924	507,500	1928	613,000
1925	551,600	1929	617,000
1926	584,000	1930	621,000
1927	602,000		

It is highly improbable, however, that the potential output shown above could be reached for several years, were estates free to produce to capacity, because of the difficulty of securing an adequate labor supply.

Future World Consumption

An exhaustive study of the probable consumption of rubber during the next few years, prepared for the Rubber Association of America by Ray B. Prescott, contains the following estimates:

FUTURE POTENTIAL WORLD PRODUCTION AND CONSUMPTION AS ESTIMATED BY RUBBER ASSOCIATION OF AMERICA

	Crude Rubber (Plantation and Wild)	
Years	Estimated World Production Tons	Estimated World Consumption Tons
1924	531,000	505,000
1925	574,000	540,000
1926	606,000	575,000
1927	623,000	608,000
1928	633,000	641,000
1929	637,000	672,000
1930	641,000	703,000

The figures above are believed to be correct within a probable variation of 10 per cent, except under unusual conditions. The consumption of rubber in 1924, conservatively estimated at 475,000 tons, is well within the 10 per cent variation allowed for and much above the exports from the producing regions.

The greatest variable in the estimated production figures is wild rubber. The probable production has been included at an average of about 20,000 tons a year. Under the stimulus of high prices, somwhat larger quantities of wild rubber may be expected. Only a substantially higher price, however, could force the production to double the estimated 20,000 tons. Potential production is very great, but increased quantities must come from areas so inaccessible that they can be profitably exploited only when crude rubber is bringing a very attractive price.

AUSTRALIA'S IMPORTS OF AMERICAN-MADE RUBBER BELTING AND hose have more than doubled in value during 1924 as compared with figures for the year 1922, the 1924 totals reaching $113,400 and $70,358 respectively, as against $44,285 and $24,780 for 1922. Imports of packing during the 1924 period are estimated at $38,078, the 1922 figure being $33,584.

What the Rubber Chemists Are Doing

Report of the Physical Testing Committee of the Division of Rubber Chemistry—II[1]

Testing

PREPARATION OF TEST SPECIMENS. The cured slabs should not be tested until 24 hours after removal from press. The test pieces may be died from the sheet by a die and mallet or the die may be mounted in an arbor press. Either method is acceptable provided it gives test strips with straight, parallel edges. Any other condition is to be avoided. In general, the thicker the slab the more difficult it is to cut acceptable strips by either method. The width of the die also has an influence. Thus it is practically impossible to cut perfect test strips from slabs 4 to 5 mm. (0.16 to 0.2 inch) thick with a 3-mm. (0.13-inch) die using the die and mallet method, whereas a 6-mm. (0.25-inch) die gives much better strips. A sharp blow gives a better result with the thick slab than does a slower one.

Naturally, the dies should be kept well sharpened, and furthermore, dull dies tend to cut wider strips than sharp dies.

Factors Influencing Determination of Thickness. A Randall and Stickney thickness gage was revised by removing the tension spring and arranging for the application of pressure by means of dead weights. Rubber test pieces 6.5 mm. (0.25 inch) wide were then gaged, the diameter of the presser foot and the pressure being varied. Rubber stocks of varying degrees of hardness (Shore Durometer) were used in these tests, the thickness of the test strip being measured at the same location on the test strip, under the various conditions.

Taking the 1.25-cm. (0.5-inch) diameter presser foot, and a load of 225 grams (8 ounces) as the standard condition, the results are expressed in terms of the apparent tensile strength in kilograms per square centimeter, assuming the standard conditions to give a tensile of 100 kg. per sq. cm. By multiplying by 10 the same comparison on the basis of 1000 pounds per square inch can be made. Thus, if the pressure is increased the

Table IX

	Stock	Shore Durometer Hardness	Dead Wt.	Apparent Tensile, Kg./Sq. Cm.					
				—0.63 cm. = 0.25 in. dia. foot—			—1.25 cm. = 0.5 in. dia. foot—		
			grams	56(185)[a]	112(370)	225(740)	56(46)	112(93)	225(185)
			ounces	2(40)	4(80)	8(160)	2(10)	4(20)	8(40)
1	Pure gum	35		100.5	101.7	103.9	97.9	99.0	100.0
2	Red inner tube	40		99.8	101.5	102.6	97.7	98.6	100.0
3	Belt friction	40		100.0	101.3	103.1	98.2	98.7	100.0
4	Friction containing 20% reclaimed tires	45		100.4	101.3	102.6	98.8	99.4	100.0
5	Black auto tread	50		100.3	100.7	101.5	99.3	99.5	100.0
6	Bumper stock	80		100.1	100.7	100.7	99.4	99.7	100.0

[a] Figures in parentheses indicate pressure per square inch (per sq. cm.).

Table X

Conditions: Double weight used on pendulum of Scott machine. Jaw speed 50 cm. (20 inches) per minute

Die	Width Mm.	Thickness Mm.	Cross-Section Sq. mm.	Length of Constricted Portion Cm.	Kg./Sq. Cm. at: A 300%	A 400%	A 500%	A 600%	B 300%	B 400%	B 500%	B 600%	B 700%
A	10	2	20	2.5	65	107	161	221	14	20	31	59	107
B	10	2	20	2.5	64	107	161	221	14	20	31	58	109
C	10	2	20	2.5	63	107	162	224	13	20	30	58	110
D	6.5	2	13	2.5	63	107	162	224	14	20	31	59	112
E	10	2	20	5.0	65	107	163	227	13	20	32	61	114
F	10	2	20	5.0	64	107	161	228	14	20	32	62	114
G	10	2	20	5.0	65	107	165	228	14	20	33	62	113

A—Tread stock, approximately 20 vol. gas black per 100 vol. rubber.
B—Inner tube, 93% rubber by weight.

As will be shown later, since slight changes in the contour of the test piece may make appreciable differences in the tensile, it becomes necessary to guard against changes in the die due to sharpening, warping, etc. This is best done by checking against a template from time to time.

The width of the test pieces should be checked occasionally. This actual width will generally be found to coincide within 1 per cent of the dimension of the die. The width of the test piece may be determined by means of a micrometer caliper using only the very least pressure necessary.

GAGING THE TEST PIECE FOR THICKNESS. The general practice is to determine the gage—i.e., thickness of the test piece in the constricted area—and to use the minimum gage for figuring the cross-sectional area. The pressure exerted on the test piece will naturally have an effect on the determination of gage. The following experiments indicate the nature and magnitude of this effect.

gage reading (thickness), and therefore the cross-sectional area, will be decreased. Using the thus determined cross-sectional area in calculating the tensile strength, higher values for tensile per unit area are obtained. Table IX gives these values.

Stock 1 varies from 97.9 to 103.9 or 6 per cent, as the pressure increases from 46 to 740 grams per sq. cm. (10 to 160 ounce per square inch). This is the softest stock tested.

Stock 6 (the hardest stock) varies only from 99.4 to 100.7 or 1.3 per cent, as the pressure is increased.

The desired pressure is that which gives the best average results for all kinds of stock and this seems to be best secured by a pressure of 185 grams per sq. cm. (40 ounces per square inch). The committee therefore recommends a presser foot 1.25 cm. (0.5 inch) in diameter and a spring tension of 225 grams (8 ounces). This agrees with most specifications.

INFLUENCE OF DIE DIMENSIONS ON STRESS-STRAIN DATA. The testing machines in most common use are of the vertical type, the strain being applied to the test piece by a traveling clamp, stress being taken up by a pendulum lever. The rate of movement of the traveling clamp is commonly 50 cm. (20 inches)

[1] Presented in part at the 67th meeting of the American Chemical Society, Washington, D. C., April 21 to 26, 1924.
Concluded from THE INDIA RUBBER WORLD June 1, 1925, 535-537.
Courtesy of *Industrial and Engineering Chemistry*, May, 1925, 535-40.

per minute. This latter condition naturally necessitates that the stress-strain data be not obtained under definite conditions of either constant rate of application of load or of elongation, as the characteristics of the stock under test determine the rate at which the load will be taken up, and a variation in the length of the test piece will affect the latter. The committee has a considerable amount of data bearing on these points, which data will be considered with respect to their bearing on the intermediate points of the stress-strain diagram and the final points—i. e., tensile and elongation.

Effect of Length of Constricted Portion on Intermediate Point of Stress-Strain Curve. Each individual result in Table X is the average of the results of ten strips. The results show conclusively that for high grade compounds of the above types there is no difference on test pieces whose constricted portions are 5.0 and 2.5 cm. (2 and 1 inches) in length.

Effect of Cross Section (Table XI). Each individual result is the average of at least eight strips. These results show no real differences either by reason of variations in cross section or in the length of the constricted portion. Therefore, it may reasonably be concluded that the dimensions of the test piece have no real effect on the determination of the intermediate points of the stress-strain curve.

Table XI

Double weight used on pendulum of Scott machine. Jaw speed, 50 cm. per minute. Cure, 90 minutes at 141° C. (287° F.). 100 rubber, 30 ZnO, 5 sulphur, 0.75 Hexa by weight.

Die	Width Mm.	Thickness Mm.	Cross Section Sq. mm.	Length Cm.	Kg./Sq. Cm. at: 300%	400%	500%	600%	700%
1	12.7	2.0	25.4	5.0	23	38	72	141	...
5	6.5	2.0	13.0	5.0	22	36	71	141	245
3	12.7	2.0	25.4	2.5	23	39	74	142	232
6	6.5	2.0	13.0	2.5	21	35	71	140	240
7	6.5	2.0	13.0	2.5	22	36	70	137	236
9	3.2	2.0	6.4	2.5	22	35	67	143	252
4	10.0	2.0	20.0	2.5	21	35	68	136	...
2	10.0	2.0	20.0	5.0	21	36	69	136	...
2A	10.0	2.0	20.0	5.0	22	36	70	138	...

EFFECT ON TENSILE. Influence of Die Dimensions on Tensile. The effects of cross-sectional area and length of the constricted portion of the test piece on the values for tensiles are rather difficult to elucidate. The committee has some data, however, which bear on these points. In Table XII are given the results on several compounds tested with two dies identical in contour except that the lengths of the constricted area were 5.0 and 2.5 cm., respectively. At least ten strips were tested for each result in the table, those values being rejected which varied by more than twice the average deviation from the mean.

Table XII

		Compound I		II		III		IV		V	
Die	Die Length Cm.	T	E	T	E	T	E	T	E	T	E
5	5	253	725	224	760	270	660	239	635	262	535
6	2.5	281	745	268	820	281	670	251	650	290	570
		Formula by weight									
Rubber		100		100		100		100		100	
ZnO		30		5		80		100		12	
Gas black										35	
Sulphur		5		6		6		6		6	
Hexa		0.75		1		1		1		1	
Cure at 141° C. (287° F.), minutes		90		75		90		75		75	

T = tensile in kg. per sq. cm. E = per cent elongation.

These data indicate conclusively that the long die gives lower tensile figures. Using the same rate of travel of the jaw of the testing machine, this means, of course, that the load is applied to the longer strip at a slower rate. This finding is in harmony with the data of Circular 38, 4th edition, page 60, of the Bureau of Standards, wherein it is shown that, using the same test piece, an increased rate of stretching leads to higher tensile values. The intermediate points on the S-S curve were identical for the two dies.

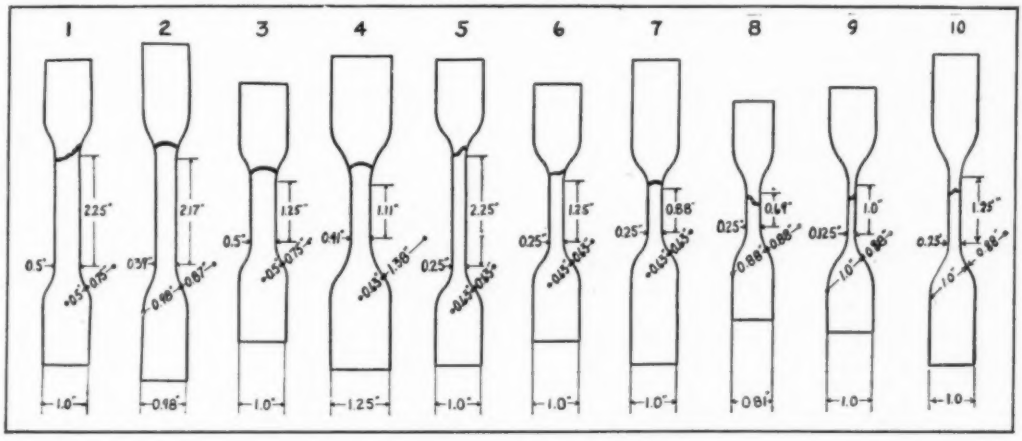


Fig. 2.—Contours of Test Sample Dies

In an attempt to determine the effect of variations in cross section on the tensile results, the data in Table XIII were accumulated. The direct experiment was to determine the effect of varying the thickness of the cured slab, but indirectly it was hoped to be able to compare results on test pieces of the same cross-sectional area but of varying width and thickness. This comparison does not hold because the contour of the different dies used varied so widely as totally to mask the effect sought.

Table XIII

Die	Width Mm.	Thickness Mm.	Area Sq. mm.	Length Cm.	Tensile Kg./sq. cm.	Elong. Per Cent
6	6.5	1	6.5	5.0	222	650
9	3.2	1	3.2	2.5	253	685
8	6.5	1	6.5	1.75	224	655
6	6.5	2	13.0	5.0	227	658
9	3.2	2	6.5	2.5	240	670
8	6.5	2	13.0	1.75	227	658
6	6.5	4	26.0	5.0	210	635
9	3.2	4	12.8	2.5	196	615[a]
8	6.5	4	26.0	1.75	216	645

[a] Results somewhat low because with 3.2-mm. (0.13-inch) die and thick slab (4mm.) the test piece was not perfect—i. e., the die-cut edges were concave.

These results indicate that slabs 1 and 2 mm. in thickness give practically constant values for tensile, but that 4-mm. slabs give low values.

The committee's recommendation is, therefore, that slabs be not much more than 2 mm. in thickness, probably a maximum of 2.5 mm. (0.1 inch).

Effect of Contour of Die on Tensile. The preliminary testing program first carried out showed that the shape of the test pieces had little or nothing to do with the intermediate points of the stress-strain curve but profoundly affected the tensile and elongation results. About ten variously shaped dies were tested and the results are given in Table XIV and also in Figure 2.

The figures for tensile are the average of not less than fifteen test strips—individual tests being rejected if their deviation from the mean was more than twice the average deviation. The error was on the average ±3 kg. per sq. cm. (±50 lbs. per sq. in.).

Die 9 gives the highest figures, but has a width of 3 mm. (0.13 inch), and for general test purposes (particularly for S-S data) is considered unreliable, owing to its small cross section.

Dies 6, 8 and 10 are very close together, but Die 8 was rejected owing to its shortness (length 0.7 inch), which necessitates the use of gage marks only 0.5 to 0.6 inch apart. This leads to considerable error in determining the length of the specimen in tension and consequently makes for inaccuracy of S-S data under ordinary working conditions.

This narrows the choice down to Dies 6 and 10, either of which are acceptable. Die 10 has the same dimensions as Bureau of Standards Die *B* (Circular 38, 4th edition, page 50), except that the length of the constricted portion has been reduced to 1.25 inches (to accommodate 1-inch bench marks).

The contours of the dies are shown in Figure 2. The position of the breaking point is quite characteristic for each die and is shown as the irregular line across the test specimen. The peculiar break at the shoulder of the test piece is due to a localization of stress at that point, sometimes referred to as a cross-stress. This localization can be demonstrated very neatly by printing a design consisting of intersecting lines making squares about 3 mm. on a side, on to the rubber test specimen while under the highest tension possible short of breaking the test piece. When the tension on the test piece is released the squares (as printed) are deformed, the cross lines being arced similarly to the breaking line. At some point at the shoulder of the test piece the lines across the specimen will be a minimum distance apart, and it will be at this point that the test piece will break, for here the rubber is stressed the most (Figure 3).

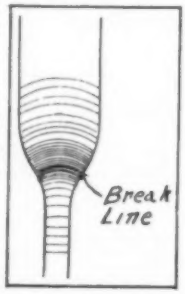


Fig. 3—The Break Test

Of course, the ideal design for a die would be of such contour that the cross-stresses would be absent and the stresses would be highest and of uniform intensity in the constricted portion of the test piece. However, the contour of the die which will produce this desired condition cannot be determined, because every different sample of rubber will react differently depending on its ultimate elongation. A very extensible sample will deform to an entirely different final contour at the instant of break than will a stock of low extensibility. In general, a variation in the original contour of the die has less effect on the breaking values of stocks of low elongation. Naturally, pure gum stocks are the most dependent on the original contour of the die.

METHODS OF SECURING STRESS-STRAIN DATA. In using a non-recording testing machine of the vertical type (such as the Scott rubber tester) it becomes necessary to devise some system for obtaining simultaneous readings of the loads and elongations. This is ordinarily done by the so-called "two-observer" method or by means of some semi-automatic device such as described by Burkley.[2] The common procedure is for the operator to determine the length of the test specimen in tension and as certain definite lengths are reached to obtain the corresponding load readings from the dial of the machine. The important part of the whole procedure is to determine accurately the length of the specimen in tension and to synchronize properly the reading or recording of the load.

It is the experience of the committee that the use of trammel pointers for determining the length of the test piece is subject to errors which make the method intrinsically inaccurate although capable of giving good check results by the same operator. This is particularly true when a die 5 cm. (2 inches) long in the constriction is used, for the following reasons:

1. There is too much error due to parallax, particularly at high elongations, because the operator's eye must follow no less than five points, all moving with respect to one another—viz., two gage marks on the test specimen, two pointers, and one indicator on the tape.

2. For this reason the operator has a strong tendency to delay recording the load until the elongation has passed the determined point, thus leading to high values for the load.

In view of these facts experience has shown that the length of the specimen is best determined by means of a ruler of appropriate length, one end of which may be lightly held in position against one gage mark on the test strip. The load is then recorded as the other gage mark passes. The length can be determined with a sufficient degree of accuracy and the results are more nearly absolute because the operator is required to follow only one moving point.

Effect of Temperature During Testing on Stress-Strain Data. Very little has been published in this connection, the only data extant having been presented by Dr. Bruni in behalf of his co-workers at the New Haven meeting of the American Chemical Society. The data by Wormely, published in Circular 38 of the Bureau of Standards, page 61, gives the results of the effect of temperatures of from 50 degrees to 90 degrees F. on tensile, elongation, and permanent set. Both of these workers conclude that as the temperature of testing is increased the tensile drops,

[2] THE INDIA RUBBER WORLD, October 1, 1922, p. 24-25.

Table XIV

	(Die measurements in inches)								
Die	1	2	3	4	5	6	7	8	9	10
Length of constriction	2.25	2.17	1.25	1.15	2.25	1.25	0.88	0.7	1.0	1.25
Width of die	0.5	0.40	0.50	0.40	0.25	0.25	0.25	0.25	0.125	0.25
Inside radius of shoulder	0.5	1.00	0.50	0.63	0.63	0.63	0.63	0.88	1.00	1.00
Outside radius of shoulder	0.75	0.87	0.75	1.37	0.63	0.63	0.63	0.88	0.75	0.88
Compound I—100 rubber, 30 ZnO, 5 sulphur, 0.75 Hexa; cure 90 min. at 141° C. (287° F.)										
Lbs./sq. in.	3,000	3,150	2,800	3,200	3,600	3,400	3,300	4,050	4,150	4,000
Kg./sq. cm.	211	222	197	227	253	281	232	285	292	281
Elongation, per cent	680	690	670	700	725	745	710	740	750	745
Compound II—100 rubber, 100 ZnO, 6 sulphur, 1.0 Hexa; cure 75 min. at 141° C. (287° F.)										
Lbs./sq. in.	3,200	3,170	2,900	3,250	4,000	3,570	3,300	3,500	3,860	3,550
Kgs./sq. cm.	225	223	204	229	229	251	232	246	272	250
Elongation, per cent	620	600	590	625	635	650	625	645	660	650

the elongation increases, and as a natural consequence, the S-S curve must recede towards the elongation axis. It is in a sense unfortunate that, in terms of a percentage change in elongation, Wormely's results do not at first seem very startling; nevertheless the data given do indicate a decided shift in the stress-strain curve. Some figures obtained in connection with some work for the Crude Rubber Committee by R. P. Dinsmore may be mentioned here.

The stock contained 100 smoked sheet, 6 ZnO, 3.0 sulphur, and 0.9 Hexa. Cures were obtained at 45, 60, and 75 minutes at 141 degrees C. (287 degrees F.) and gave the following properties when tested at 25 degrees C. (75 degrees F. room temperature):

Cure Min.	Kg./Sq. Cm. at: 500%	600%	700%	Tensile Kg./sq. cm.	Elong. Per Cent
45	19	32	60	130	845
60	23	42	80	163	830
75	29	54	105	175	790

The 60-minute cures were then tested at 21 degrees to 30 degrees C. (70 degrees to 85 degrees F.) with the following results:

Temp. of Test °F.	°C.	Kg./Sq. Cm. at: 500%	600%	700%	Tensile Kg./sq. cm.	Elong. Per cent	Calcd. Equiv. Cure. Min.
70	21	25	45	85	167	825	63
75	24	23	42	80	163	830	60
80	27	22	39	74	170	845	55
85	30	22	36	67	150	840	51

No particular importance is attached to the tensile figures, inasmuch as enough strips were not broken to determine this figure with exactness. The S-S data, particularly at 700 per cent, are much more significant.

The results at the higher temperatures are similar in all respects to the results obtained from the shorter cures. By interpolation (on the modulus at 700 per cent vs. time of cure curve, see last column) we see that raising the temperature from 24 degrees to 30 degrees C. (75 degrees to 85 degrees F.) is equivalent to a reduction in cure from 60 to 51 minutes, or a 15 per cent change.

When it is considered that this result is characteristic of one stock only, and that each stock (and more than probably each cure of each stock) has a different temperature coefficient, it will be readily realized that precise testing necessitates accurate temperature control of the "environment."

E. B. CURTIS, J. W. SCHADE,
C. W. SANDERSON, IRA WILLIAMS
W. W. VOGT, *Chairman.*

CARBOTEX

The pre-eminence of carbon black as a reinforcing compounding ingredient for rubber has led to its very general use in rubber mixings despite the drawback due to its blacking the mill room generally with dust. This tendency to dust while handling and milling is entirely obviated in the combination known as Carbotex, a scientific blend of standard quality plantation rubber and genuine American gas carbon black. It is not a reclaimed rubber nor does it contain any reclaim. Its gravity is 121, acetone extract 4.71, mineral matter 0.41. Mixings containing Carbotex are made without the black nuisance so detrimental to other work particularly to white, red and other colored stocks.

A NEW CLAY FILLER

A clay filler for rubber compounding has recently appeared under the name "Cott'n Bloss'm." This material is refined by special methods to exert the maximum effect in tensile properties of rubber mixings. Tests are reported to indicate that from 5 to 10 per cent more of this clay can be used giving as high as 11 per cent increase in elongation and over 20 per cent increase in tensile strength in rubber stocks.—American Pigment Co., Revenna, Ohio.

Chemical Patents

The United States

MANUFACTURE OF RUBBER. A vulcanized rubber composition containing an initially deflocculated clay.—Philip Schidrowitz, William Feldenheimer and Walter W. Plowman, London, England. United States patent No. 1,538,000.

VULCANIZATION OF RUBBER. Promoting the vulcanization of rubber by incorporating a small amount of ditolyl substituted guanidines in which the orthotolyl guanidine predominates together with other compounding ingredients and vulcanizing the mixture.—John Young, Caldwell, New Jersey, assignor to National Aniline & Chemical Co., New York, N. Y. United States patent No. 1,538,076.

PLASTIC COMPOSITION. Rubber composition containing a rubber matrix and a filler which has been treated with gas soluble in the matrix.—Robert R. Williams, Roselle, N. Y. United States patent 1,540,049.

PROCESS FOR OBTAINING VINYL CHLORIDE FROM ACETYLENE. The process comprises passing acetylene through a water solution of hydrochloric acid containing more than 0.1 mol per liter of a mercury compound, and recovering the vinyl chloride produced.—I. Ostromislensky, Locust Point, New Jersey, assignor to the Naugatuck Chemical Co., Naugatuck, Connecticut. United States patent No. 1,541,174.

PROCESS FOR PRODUCING STYROL AND ITS HOMOLOGS FROM AROMATIC HYDROCARBONS. I. Ostromislensky, Locust Point, New Jersey, assignor to the Naugatuck Chemical Co., Naugatuck, Connecticut. United States patents Nos. 1,541,175 and 1,541,176.

COATING COMPOSITION AND VARNISH REVIVER. A composition adapted for use as a varnish reviver comprising chlorinated rubber, a solvent therefor and a resinous homogenizing agent.—Carleton Ellis, Montclair, New Jersey, assignor to Chadeloid Chemical Co., New York, N. Y. United States patent No. 1,541,693.

The Dominion of Canada

VULCANIZING RUBBER. A vulcanizing method comprising admixing caoutchouc, a vulcanizing agent and benzothiazyldisulphide, and applying heat thereto.—The Goodyear Tire & Rubber Co., assignee of L. B. Sebrell and C. W. Bedford, all of Akron, Ohio. Canadian patent No. 250,074.

FLOOR COVERING COMPOSITION. A facing composition consisting of granulated cork, rubber, shredded asbestos and vulcanizing ingredients and a facing composition composed of soft rubber, vulcanizing ingredients and coloring matter pressed together and vulcanized.—Harold H. Duke, Sydney, New South Wales, Australia. Canadian patent No. 250,167.

WATERPROOFING COMPOUND. Solutions of Cumar resin, colophony, paraffin dissolved in gasoline and added to dilute rubber cement.—C. D. Shaffer, Kalamazoo, Michigan. Canadian patents Nos. 250,248 and 250,249.

The United Kingdom

VULCANIZING RUBBER. A cold process of vulcanization by treatment with a mixture of sulphides of phosphorus. The rubber may be in solid, dissolved or emulsified form, and the sulphide may be added as a solid or dissolved in a solvent such as carbon disulphide or benzene.—S. J. Peachey, 44 Platts Lane, Hampstead, London, A. Skipsey, White Rose Lane, Woking, Surrey. British patent No. 230,637.

RUBBER COMPOSITION. A composition for covering roads, roofs and floors consists of a solution of vulcanized rubber in asphalt mixed with a mineral filler such as sand or pulverized basalt, slag, etc. A typical composition consists of 2 parts of Trinidad asphalt, 1 part rubber and 6 parts sand.—R. C. Van Haagen, Vredehof, De Bilt, Holland. British patent No. 231,503.

PLASTIC COMPOSITIONS. Fused silica is degasified by heating for use as a filler in plastic compositions. It is particularly applicable to rubber compositions.—Western Electric Co., Ltd., Connaught House, Aldwich, London. British patent No. 231,781.

Germany

414,210 (October 24, 1923). Process for concentrating rubber latex. Dr. J. Traube, Schloszstrasse 29, Charlottenburg.

414,343 (January 15, 1924). Process for producing raw rubber. The Anode Rubber Co., Limited, London; represented by Dr. W. Karsten and Dr. C. Wiegand, Berlin, S. W. 11.

PARADURA

The use of hydrocarbon or so-called mineral rubber in general rubber manufacturing practice is based on both economy and improvement of the products in physical properties. The preparation of these materials is conducted under controlled conditions and their application studied by testing engineers in touch with the practical use of the products. One of the more recent developments in rubber compounding hydrocarbons is Paradura, a bagged granular material most convenient for cleanly handling and economical weighing out in the compound room. Its manufacturers claim that its use in tire tread and other abrasive service stocks confers prolonged resistance to aging, increased tensile and elongation, also strong reinforcement against tear and abrasion. While good mineral fillers exert these desirable characteristics in varying degree Paradura is said to possess them in much greater measure as demonstrated by physical tests.

New Machines and Appliances

Scrap Rubber Washer and Centrifugal Revolving Screen

THE revolving washer here illustrated is used for washing ground vulcanized rubber in the reclaiming process. It is a screen, revolving in a tank of water, designed and constructed to produce a thorough disintegrating and washing effect. The tank in which the screen revolves is kept filled with water to the level of the apron shown in the picture. Bars for disintegrating the stock extend from head to head of the machine. They are one-inch diameter and spaced four inches apart. They are further supported by heavy cast spiders which carry the weight of the screen. There is also a partition or baffle plate across the center spider, to retard the flow of the rubber through the screen.

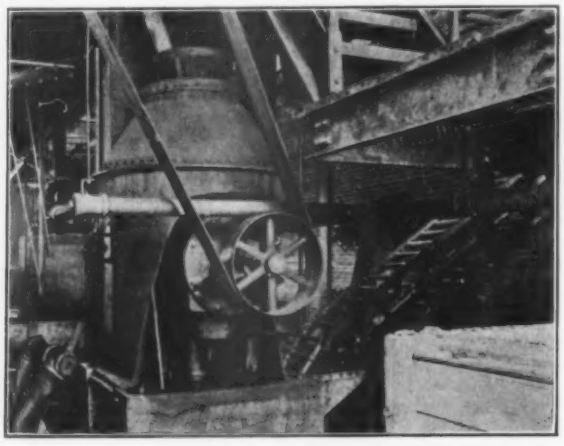
Scrap Rubber Washer

The discharged particles of rubber are picked up by a plowshare-shaped casting secured to the discharge end. The revolution of the machine elevates the rubber out of the water into a discharge spout feeding by a screw conveyor and bucket elevator into a trap box from which it is fed to the continuous centrifugal for dewatering.

Continuous Centrifugal

The centrifugal here pictured has been applied successfully in rubber reclaiming plants for dewatering washed ground stock both before and after reclaiming. In the latter case it is used to remove residual acid or alkali from the digested material.

The material to be handled must be uniformly fed into the hopper and distributing paddles feed it evenly onto the top of the distributing cone from which it is immediately thrown against the screen held by the basket. The liquid passes through the screen and striking the liquor shield is deflected into the launder which surrounds the base and drains away through two outlets. The solid material is forced down the screen by the scraping flights which are inclined at an angle to the horizontal and are helical in form. It is then discharged into the opening, bounded by a renewable ring and is thrown by centrifugal force against this ring, from which it gravitates through annular openings between the outer wall of the base casing and the spherical oil-tight gear case and is discharged.

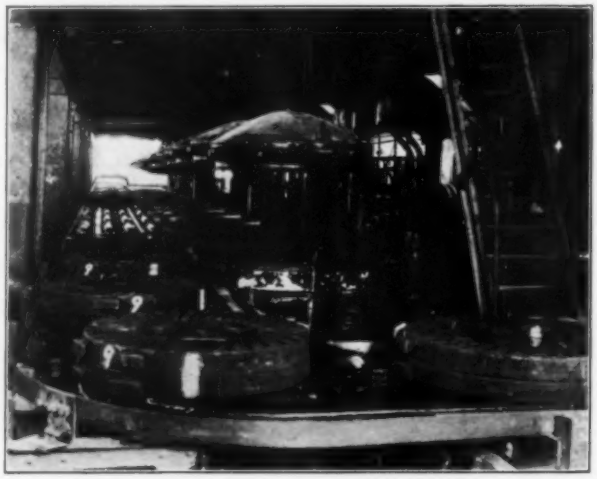


Continuous Centrifugal

In the reclaiming industry this continuous centrifugal is run at a basket speed of 1,088 r.p.m. The rubber is under approximately 200 pounds per square inch centrifugal force which reduces the surface moisture to about 28 per cent. The capacity of the machine varies from 2 to 100 tons per hour.—G. H. Elmore, Wesley Building, 17th and Arch streets, Philadelphia, Pennsylvania.

Modern Tire Mold Conveyor System

The enormous and ever increasing demand for tires necessitates the use of the most modern mold handling equipment. Such a system, as installed in one of the foremost tire plants in the country, is here pictured. It comprises an upper and lower conveyor. These are designed to handle tire molds weighing 1,300 pounds.



Jeffrey Tire Mold Conveyor

The lower conveyor operates in a horizontal plane around the curing presses. It is 124 feet in length and 11 feet in width between sprockets; travels at a speed of 16 feet per minute, and consists of a single strand of extra heavy Jeffrey chain provided with special hinged pusher attachments every 54 inches. The chains are carried in channel iron troughs and the molds are pushed along on T rail trackage. Special sprockets with disks serve to carry the molds around the corner sprockets.

The upper conveyor operates parallel and over the longitudinal run of the lower conveyor. It is located on the opposite side from the curing presses and handles the top half of the molds. Its trackage is of such contour that the molds can be parted, enabling tires to be removed, and the molds refilled with uncured tires.

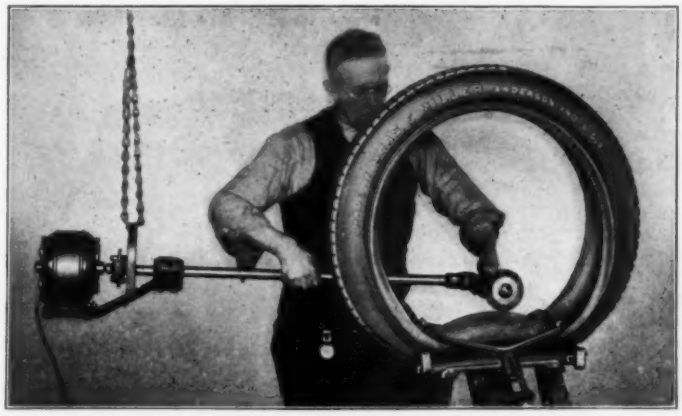
The upper and lower conveyors are driven through the same gearing so that they move in unison.

Conveyors are provided with compression springs and a set of coil chains which can be attached to upper half of molds. These conveyors are driven through cut spur gearing and worm drive direct connected to motor.—The Jeffrey Manufacturing Co., Columbus, Ohio.

Flexible Grinder

A flexible grinder is a most convenient tool in the tire repair shop for cleaning tire surfaces preliminary to patching and for buffing sectional mold cavities. For these jobs two types of grinder are needed, one of which is here pictured. These grinders embody a new type of flexible shaft which differs from the ordinary in that it is neither stranded wire nor a link chain propeller shaft. Instead the shaft is made of ordinary cold rolled steel with bronze bearings.

The form illustrated has a beveled gear flexible elbow which permits grinding the inside of an automobile casing. The second type, not shown, has just a straight shaft connected to the motor with a flexible fabric joint. Both styles of grinders are suspended from the ceiling so they can be moved in all directions.—Chas. E. Miller, Anderson Rubber Works, Anderson, Indiana

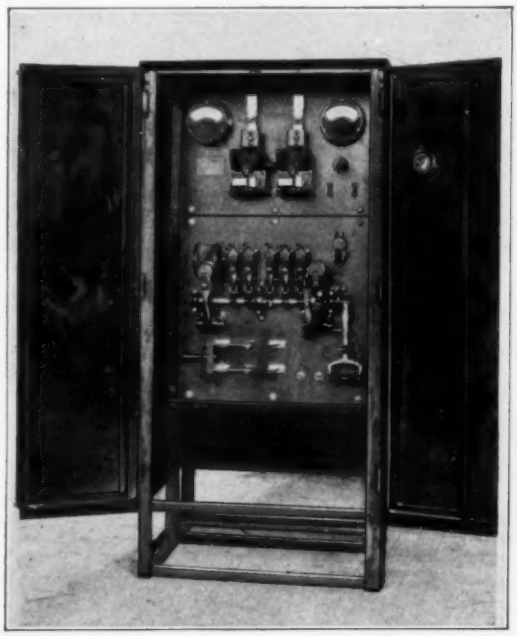


Miller Flexible Grinder, No. 1

Fire Pump Controllers

One of the line of several fire pump controllers redesigned to meet the latest requirements of the National Board of Fire Underwriters is here illustrated. It is the manual starter for direct current motor-driven pump. The main line knife switch permits connecting the controller and motor to either of two sources of current supply, and acceleration is accomplished by means of a series of contactors under the control of the operating lever and which close successively to shunt out the external resistance in the armature circuit. The double-pole circuit-breaker is arranged so that each pole can be closed independently, thus leaving the other pole free to trip in case an overload condition exists. Both poles are opened in case an overload occurs while the motor is running. A pilot light mounted on a panel indicates when power is on the line. The carbon-to-copper current-carrying contacts are standard C-H design and are the same as those used on C-H elevator controllers, being made exceptionally rugged to withstand severe service.

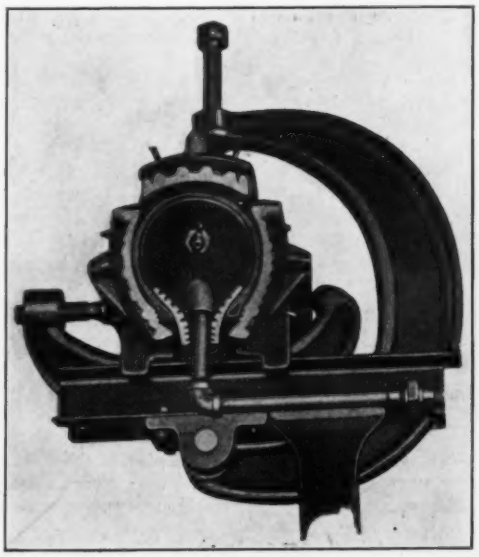
Equally effective in design and operation are the combined manual and automotive starter for direct current motor driven fire pumps; also the corresponding types of starters for use with alternating current motor driven pumps.—The Cutler-Hammer Manufacturing Co., Milwaukee, Wisconsin.



Cutler-Hammer Manual Starter for Fire Pumps

Repair Vulcanizer for Large Pneumatic Tires

Hitherto, vulcanizers and tire repairmen have had difficulty in curing a repair on a balloon tire or a truck tire. Like all cord tires, these are repaired on the inside. Their numerous tread shapes and designs present a problem which can not be satisfactorily handled by the old sectional mold with its air bags, steam bags, non-skid pads, soapstone fillers, etc.



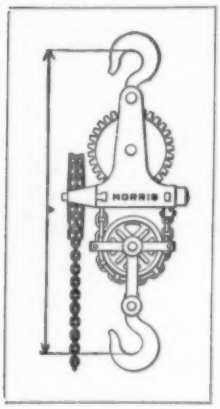
Akron Tyrwelder

The Tyrwelder here pictured was developed to solve this repair problem. It is equipped with three steel plates attached to which are rubber studded cushions. The section in the tire to be repaired is placed over a central steam arm or core. By means of heavy steel clamps and powerful screws, the three rubber cushioned plates press downward and inward on the tire holding the repaired

section to be vulcanized snugly in contact with the central steam arm. This welds the repair to the tire so that it actually becomes a part of it. The cure is accomplished quickly, for the heat is applied directly to the raw portion to be cured. The resilient rubber cushions take up the inequalities of any shaped bead, sidewall or tread of every tire, thus eliminating the use of air bags, and rubber impression pads necessary when section molds are used.—Akron Tyrwelder Co., Akron, Ohio.

Worm-Gear Chain Block

Chain blocks are inevitable equipment in every rubber factory as in most others. One of the better kind is here pictured. In action it runs smoothly up or down, fast and easily without the slightest jerk. It sustains the load by means of an automatic brake and not by excessive gear friction. It is claimed to be the only efficient chain block using the worm-drive principle. The frame is of steel forgings and rolled steel plates. A self-alined gun-metal bearing and a special ball-thrust bearing support the double-thread worm which is turned from the solid bar and carefully heat-treated. The automatic brake is an exclusive feature. It turns freely with the worm and sustains the load but offers no resistance either to hoisting or lowering. The machine-cut worm wheel and the load chain wheel are in one piece. The chain pockets are glass-hard and fit the chain exactly. Double life of the load chain may be obtained by reversing it when worn.—Herbert Morris, Incorporated, Buffalo, New York.

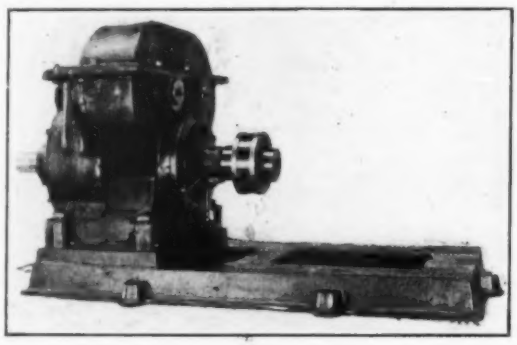


Morris Chain Block

Spur Gear Speed Transformer

The industrial type gear speed transformer is used wherever a condensed power drive is needed and two speeds required. The design, shown in the illustration, is simple and accessible. It consists of an assemblage of either two or four pairs of cut steel spur gears in a cast iron housing. Two pairs of gears are used for small speed ratios and four pairs for larger ratios of revolutions. Even numbers of gears in both cases are necessary to obtain the same direction of rotation of both shafts.

Speed transformers are popular because they afford the short-cut from motor to machine, or from shaft to shaft where speeds are widely different. A few of their advantages are: the spur gears operate quietly in an oil bath and step the speed down or up with maximum efficiency; high speed motors may be used with this type; the speed change can be small or great as desired for practical power transmission; no adjustments are required and the gear housing is dust and leak proof; it is an efficient safety device for the protection of workmen.—The Hill Clutch Machinery & Foundry Co., Cleveland, Ohio.



The Hill Speed Transformer

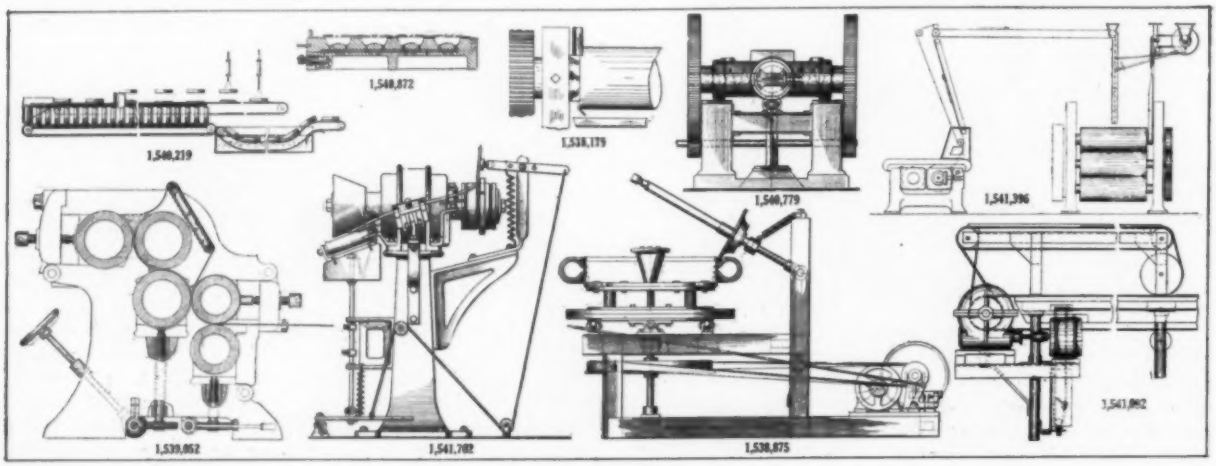
Machinery Patents

The United States

(1,538,179) STOCK GUIDE FOR MIXING MACHINE ROLLS. This device retains the stock between the working surfaces of the rolls. It is formed of two metal plates, adapted to overlap at their adjacent edges, with their inner surfaces in substantially the same plane. The tendency of the stock to pass off the ends of the roll is offset by suitably inclined surfaces as part of the guiding device.—L. V. Dixon, assignor to Dunlop Tire & Rubber Goods Co., Limited, both of Toronto, Canada. United States patent No. 1,538,179.

(1,538,875) TIRE MOUNTING AND DEMOUNTING APPARATUS. This is a practical form of rotary chuck for supporting rims of different sizes. It has a manually operable presser device which may be adjusted to position it with respect to the tire and rim. This allows the bead portion of a tire to be forced laterally off the rim, also to effect a similar operation upon the retaining flanges with which certain classes of rims are provided.—H. D. Stevens, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio. United States patent No. 1,538,875.

(1,539,052) CALENDERING, EMBOSSING AND CUTTING MACHINE. In a 5-roll calender for embossing shoe upper stock, the embossing roll has channels in its surface corresponding in form to the design of embossing to appear on the surface of the finished article. Directly below the embossing roll is a cutting roll provided with cutting edges corresponding with the design to be cut. These rolls are geared together and move at the desired relative speed. The designs are arranged so that the forms are delivered in a continuous strip. The surplus material is carried upward by the embossing roll, and onto a conveyor by which it is delivered between the calender feed rolls.—J. A. McCrohan and H. C. Erich, New Haven, Connecticut, United States patent No. 1,539,052.



(1,540,219) VULCANIZING APPARATUS. The apparatus is so arranged that the tire molds are in travel at all times, the vulcanizing being carried on in a tunnel-like vulcanizer. The manual labor is reduced to removal of the cured tires, inspection of the uncured tires and the securing together of the two halves of the mold. In operation, the mold, with the uncured tire within, passes horizontally above the vulcanizer and is discharged on an incline which turns the mold upon edge at the entrance of the curing tunnel. The latter is heated by hot air by which the molds are gradually heated as they approach the central vulcanizing heat of the tunnel, and gradually cool as they pass this point. On exit from the tunnel the molds are conveyed submerged through a cooling tank previous to opening for removal of the tire.—C. A. Myers, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio. United States patent No. 1,540,219.

(1,540,779) MECHANISM FOR REMOVING DIE HEAD FROM TUBING MACHINE. A double screw tuber with a side outlet for threaded head or die holder has a gear and pinion connected with the head operating to unscrew it from the casing of the machine.—O. O. Hollenbeck, Racine, Wisconsin. United States patent No. 1,540,779.

(1,540,872) MOLD FOR HOLLOW RUBBER ARTICLES. A mold having a set of cavities each provided with a surrounding raised edge, vents leading from the respective cavities to a common discharge, a valve on the mold controlling the discharge and adapted to stand either open or closed, and external means for opening the valve.—A. H. Bates, Cleveland Heights, Ohio, assignor to Paramount Rubber Consolidated, Tuckahoe, N. Y. United States patent No. 1,540,872.

(1,541,092) APPARATUS FOR ASSEMBLING TREAD UNITS. A series of belt conveyors and stationary supports designed to bring into assembled position three elements comprising a complete tire tread.—C. B. Ames, Cudahy, and G. F. Wikle, Milwaukee, Wisconsin, assignors, by mesne assignments, to The Fisk Rubber Co., Chicopee Falls, Massachusetts. United States patent No. 1,541,092.

(1,541,396) CALENDERING. A series of belt conveyors are arranged between a warming mill and a calender to convey a continuous strip of warmed stock from the mill to feed the calender.—Clement A. Rossbach, Milwaukee, Wisconsin, assignor, by mesne assignments, to The Fisk Rubber Co., Chicopee Falls, Massachusetts. United States patent No. 1,541,396.

(1,541,762) BEAD-BUFFING MACHINE. A motor driven shaft mounted on a standard carries on one end a bead driving drum, and on the other a supporting drum. There is a spring elevated roller beneath the driving drum and a spring depressed roller above the supporting drum. The bead is received between the rollers and the drum, and is buffed by a brush which it passes in its travel.—H. A. Denmire, assignor to The General Tire & Rubber Co., both of Akron, Ohio. United States patent No. 1,541,762.

Other Machinery Patents

The United States

1,537,866 Apparatus for making nipples, finger cots and bulbs and the like. T. W. Miller, assignor to The Faultless Rubber Co., both of Ashland, Ohio.
1,538,481 Tire repair vulcanizer. F. R. Gewert, Cincinnati, Ohio.
1,539,586 Method and apparatus for assembling adhesive sheet material. F. J. MacDonald, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.
1,539,828 Tube-plate repair vulcanizer. C. W. Campbell, assignor to Moll Manufacturing Co., both of Denver, Colorado.
1,539,887 Press platen. F. C. Vandergrift, assignor to The Williams Foundry & Machine Co., both of Akron, Ohio.
1,539,923 Collapsible core. J. C. Tuttle and F. A. Bollinger, assignors to The Firestone Tire & Rubber Co., all of Akron, Ohio.
1,540,465 Wrapping machine. F. F. Feldhaus and R. H. Noah, assignors to The Akron Rapatire Co., all of Akron, Ohio.
1,540,779 Extruding machine. O. D. Hollenbeck, Racine, Wisconsin.
1,541,190 Rubber sheet-controlling device. C. J. Smith, assignor to Morgan & Wright, both of Detroit, Michigan.
1,541,528 Core bridge for tubing machines. V. Royle, Paterson, New Jersey.
1,541,594 Repair vulcanizing apparatus. C. M. Semler, Akron, Ohio.

Germany

413,418 (April 16, 1924). Device for flat vulcanizing tire covers. Jacobus Spyker, Amsterdam; represented by Dr. A. Mestern, Berlin, S. W. 48.
414,715 (November 17, 1922). Apparatus for making tire covers. The Norwalk Tire & Rubber Co., Norwalk, Connecticut; represented by G. Benjamin and H. Wertheimer, Berlin, S. W. 11.

The Dominion of Canada

249,879 Apparatus for making rubber footwear. The B. F. Goodrich Co., New York City, New York, assignee of F. J. MacDonald, Akron, Ohio, both in U. S. A.
249,880 Machine for making footwear. The B. F. Goodrich Co., New York City, New York, assignee of F. J. MacDonald, Ellet, Ohio, both in U. S. A.
250,101 Calender. T. H. Throop, assignee of N. R. Goodwin, both of Trenton, New Jersey, U. S. A.
250,185 Tire building machine. W. H. Herman, Lancaster, Ohio, U. S. A.

New Zealand

52,588 Pneumatic-tire manufacture, repairing or retreading. G. D. Watson, 14 Mayfair street, Lower Riccarton, Christchurch, New Zealand.

Process Patents

The United States

1,537,075 Method of making fan belts. A. L. Freedlander and W. G. Goodwin, assignors to The Rubber Development Co., all of Dayton, Ohio.
1,537,297 Method of producing ebonite sheet. W. C. Geer and H. Gray, Akron, Ohio, assignors to The B. F. Goodrich Co., New York, N. Y.
1,537,518 Rubber and cork coated fabric and method of manufacture. J. A. Wilson, Elizabeth, assignor to Duratex Corporation, Newark, both in New Jersey.
1,538,590 Electrical welding process. J. T. T. Randles, assignor to Dunlop Rubber Co., Ltd., both of Birmingham, England.
1,539,618 Tire and method of manufacture. H. Willshaw, assignor to Dunlop Tire & Rubber Corporation of America, both of Buffalo, New York.
1,539,869 Method and apparatus for making hard rubber jars and similar materials. F. T. Roberts, Upper Montclair, New Jersey, assignor to Paramount Rubber Consolidated, Inc., Philadelphia, Pennsylvania.
1,540,444 Sponge rubber in matrix-forming process. G. H. Willis, assignor to F. Lahey, both of Akron, Ohio, and V. V. Messer Manufacturing Co., Inc., Long Island City, New York.
1,540,563 Method of forming protective linings of rubber. E. L. Oliver, Piedmont, California.
1,540,580 Method of vulcanizing rubber. R. M. Warner, assignor to The Miller Rubber Co., both of Akron, Ohio.
1,540,885 Process and apparatus for obtaining rubber from latex. E. Hopkinson, New York, N. Y.
1,541,119 Forming holes in rubber articles. W. De Rusha, Milwaukee, Wisconsin, assignor to The Fisk Rubber Co., Chicopee Falls, Massachusetts.

The Dominion of Canada

249,450 Method of manufacturing rubber footwear. H. C. L. Dunker and L. G. A. Silfe, both of Halsinborg, Sweden.
250,322 Battery jar. The Dunlop Tire & Rubber Goods Co., Ltd., assignee of J. Western, both of Toronto, Ontario, Canada.
250,362 Method and apparatus for producing strands for tire fabrics. The Multiple Cord Corporation, assignee of H. E. Grabau, both of New York, N. Y., U. S. A.
250,363 Method and apparatus for producing strands for tire fabrics. The Multiple Cord Corporation, assignee of H. E. Grabau, both of New York, N. Y., U. S. A.
250,364 Method and apparatus for weaving tire fabrics. The Multiple Cord Corporation, assignee of H. E. Grabau, both of New York, N. Y., U. S. A.

The United Kingdom

231,828 Method of making lapped joint in rubber tubes. H. Willshaw, Dunlop Tire & Rubber Corporation of America, Buffalo, New York, U. S. A.

New Zealand

52,589 Pneumatic-tire manufacture repairing or retreading. G. D. Watson, 14 Mayfair street, Lower Riccarton, Christchurch, New Zealand.

Germany

414,049 (August 23, 1924). Mass vulcanizing of tire covers. (Addition to patent No. 412,902). Jacobus Spyker, Amsterdam, Holland; represented by Dr. A. Mestern, Berlin, S. W. 48.

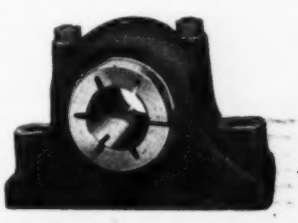
Design Patents

Germany

906,267 (January 29, 1924). Tire mounting tool. Continental Caoutchouc und Gutta Percha Compagnie, Hannover.
906,885 (March 11, 1925). Device for repairing inner tubes. Josef Bitschnau, Horrem, Bez. Köln.
907,065 (March 21, 1925). Device for mounting and demounting pneumatic covers. Dr. Carl Weidmann, Leichlingen, Rheinland.
907,118 (December 11, 1924). Tire mounting tool. Dr. Carl Weidmann, Leichlingen, Rheinland.
908,943 (April 9, 1925). Steam vulcanizing mold with separate core. Gustav Riesener, Kurfürstenstrasse 18, Koblenz am Rhein.

Roller Bearing Pillow Block

The roller bearing pillow block here illustrated consists of two Timken tapered roller bearings mounted on a ground steel tube and fitted in an accurately machined, heavy cast-iron solid ring, which is turned on the outside to a section of a perfect sphere. This solid ring containing the bearing assembly is mounted in a massive cast iron two-piece housing with an internal machined spherical seat. The bearing is thus made self-alining and equal distribution of the bearing load secured.



Dodge-Timken Pillow Block

These pillow blocks are very rugged and adapted to heavy service.—Dodge Manufacturing Corp., Mishawauka, Indiana.

The Editor's Book Table

Book Reviews

"THE PLANTATION RUBBER INDUSTRY IN THE MIDDLE East." By David M. Figart, special agent. Trade Promotion Series No. 2. Crude Rubber Survey. Published by the Department of Commerce, Washington, D. C. Paper, illustrated, 317 pages, 5¾ by 9 inches, price 50 cents.

THIS is the second of a series of publications to be based on crude rubber; the first, entitled "Marketing of Plantation Rubber," by Special Agent J. J. Blandin, was issued by the Bureau of Foreign and Domestic Commerce as Trade Information Bulletin No. 180 on January 24, 1924. Publications dealing with the possibilities of plantation rubber production in other tropical regions are in process of compilation and will be forthcoming at an early date.

The present volume provides a comprehensive, detailed, authentic and up-to-date survey of the plantation rubber industry in those countries now producing 95 per cent of the world's rubber supply. The economic factors surrounding the industry are discussed, with special emphasis on cost of production and the extent to which the future potential output from the present planted area can be depended upon to meet the world's increasing demand. The report also brings out the material reduction in costs effected during the last few years through adoption of altered methods, and indicates the possibility of additional important savings by further reorganization.

A foreword by Herbert Hoover, Secretary of Commerce, emphasizes centralized production of crude rubber by Great Britain and centralized consumption by the United States, and points out the economic difficulties to producers as well as consumers which are generally the ultimate results of combinations in restraint of international trade. There follows an introduction reviewing in general the plantation rubber situation in the Middle East. The main body of the report is divided into seven parts.

Part I is a brief summary of the outstanding facts and conclusions from the entire report.

Part II consists of a collection of illustrations picturing with great completeness the production of plantation rubber.

Part III is devoted to the financial aspects of the industry—capital costs, production costs, capital invested, financial history of plantation companies, organization of the industry.

Part IV describes and discusses the general problems confronting the industry. The story of the introduction of the Hevea tree into the East is followed by a review of the conditions suitable for Hevea cultivation, selection of high yielders, planting methods, diseases and pests, tapping methods, the factor of health, the problem of superintendence, labor supply, the economic life of a rubber tree, native owned rubber.

Part V consists of reports with maps on rubber growing conditions in Ceylon, India, Burma, Malaya, Netherlands India—Java, Sumatra, Dutch Borneo—Indo-China, British North Borneo, Sarawak, Brunei, Siam and the Pacific Islands.

Part VI describes the native plantation rubber industry of Sumatra.

Part VII embraces many pages of statistics, including plantation areas, exports and production, estimates of future potential production, currencies, weights and measures, a bibliography and index.

"TWENTY-FIFTH ANNIVERSARY, 1900-1925—YEAR BOOK." PUBlished by The Rubber Association of America, Inc., New York, N. Y. Prepared by the general manager and secretary. Paper, 54 pages, 6 by 9 inches.

Attractively bound in silver paper, the Silver Anniversary Year Book for 1925 reviews the quarter century of the Rubber Association since its establishment in 1900 as the New England Rubber Club. As usual, the publication is arranged in two sections, and contains lists of officers and directors, and the names of members of various committees, as well as the Association's charter, constitution and by-laws.

"UNITED STATES GOVERNMENT MASTER SPECIFICATIONS." Published by the Department of Commerce, Bureau of Standards, Washington, D. C.

These specifications were officially promulgated by the Federal Specifications Board on given dates for the use of the departments and independent establishments of the Government in the purchase of rubber goods. The circulars and titles are as follows:

No. 114. Cotton Rubber Lined Fire Hose (Couplings and Gaskets).
No. 209. Oil Suction and Discharge Hose.
No. 217. Surgeons' Rubber Gloves.
No. 218. Rubber Dam.
No. 219. Rubber Bandages.
No. 220. Stomach or Lavage Tube.
No. 221. Colon Tube.
No. 222. Politzer Bag.
No. 223. Rubber Tips for Crutches.
No. 224. Rubber Pillow Cases.
No. 225. Rubber Catheters.
No. 226. Rubber Finger Cots.
No. 227. Rubber Ice Bags.
No. 228. Helmet-Shaped Ice Bags.

"PERIOD ADAPTATIONS FOR MODERN FLOORS—A STUDY OF the Architectural and Decorative Values of Floor Treatments." Edited and published by the service staff of The Architectural Forum, for the United States Rubber Co. Paper, illustrated, 57 pages, 8½ by 11 inches.

This beautifully illustrated publication represents a study of the interiors of certain historic European buildings, particularly with reference to their floors. Following such period styles, and using such flooring material as precedents, the United States Rubber Co. has developed designs of rubber tiling to be used in modern buildings. Typical installations in America of such tiling are mentioned, as well as specifications necessary to meet varied conditions and requirements.

"OFFICIAL AMERICAN TEXTILE DIRECTORY—1925." COMPILED annually by The Textile World, and published by Bragdon, Lord & Nagle Co., 334 Fourth avenue, New York, N. Y. Cloth, 1118 pages, 6 by 9 inches.

Data of much value to various industries appears in this thirty-first edition of a well-known publication. In the present volume each of the customary six divisions has been considerably enlarged, while the list of mills, with changes in personnel, addresses, etc., has required many revisions. A classified listing of manufacturers and dealers in machinery, equipment and supplies also is included, while the names of textile manufacturing establishments in the United States, Canada and Mexico are arranged both geographically and alphabetically.

New Trade Publications

THE YARNALL-WARING CO., CHESTNUT HILL, PHILADELPHIA, Pennsylvania, has issued a neat illustrated celluloid card ingeniously designed to show the action of their Type B balanced seatless boiler blow-off valve. The internal mechanism is illustrated on a slidable strip of celluloid arranged to picture the valve action as the strip is pulled down. The operation of the valve is thus clearly demonstrated and shown to be simple and effective.

A BRIEF ANNOUNCEMENT, ISSUED BY THE CAMERON MACHINE Co., Brooklyn, N. Y., refers to the ready conversion of side rolls and cull rolls of paper, or other stock, to saleable rolls by slitting

and winding them on a Camachine Type Six. Camachines are unrivaled for slitting and rewinding paper, fabrics and rubber.

FORMIC ACID FOR LATEX COAGULATION IS THE TITLE OF PAMPHlets 1 and 2, giving latest data on the coagulation of latex by formic acid. Published by Fabriek Van Chemische Productin, Schiedam, Holland.

THE CATALOG PUBLISHED BY HARVARD UNIVERSITY REGARDING ITS Graduate School of Business Administration contains data of interest and value.

"SMALL HERRINGBONE SPEED REDUCERS—BULLETIN No. 38" published by The Falk Corporation, Milwaukee, Wisconsin, is a well-illustrated catalog containing important information for rubber engineers.

"LIGHT AND VISION," AN ILLUSTRATED BULLETIN PREPARED BY the National Lamp Works of the General Electric Co., Nela Park, Cleveland, Ohio, represents a careful study of lighting conditions, and factory illumination in particular.

THE FOLLOWING HOUSE ORGANS CONTAINING ITEMS OF INTEREST have been received: "The Wingfoot Clan," published by the Goodyear Tire & Rubber Co., Akron, Ohio; and "Tire Trade News," published by the Miller Rubber Co. of N. Y., Akron, Ohio.

GAS FILLED RECORDING THERMOMETERS FOR TEMPERATURES BEtween 60 degrees below zero and 1,000 degrees F are fully illustrated and described together with incidental fittings and charts in a special catalog issued by The Bristol Co., Waterbury, Connecticut.

A RECENT BULLETIN PUBLISHED BY THE UNITED STATES DEPARTment of Labor is entitled "Standard and Scheduled Hours of Work for Women in Industry—A Study Based on Hour Data from 13 States." In this survey 26 rubber manufacturing establishments are included, where approximately 6,194 women are employed.

"MICROGRAMS" FOR RUBBER MEN, No. 6, IS THE LATEST OF A series of bulletins issued at intervals by the Binney & Smith Co., 41 East Forty-second street, New York, N. Y. This issue discusses the value of micronex for the attainment of maximum reinforcement at minimum cost in tire tread stocks. Preceding issues of "Micrograms" have treated the following topics: "How to Cut Cost Without Cutting Quality"; "Particle Size and Specific Surface"; "Volume Cost-Savings in Shoe Stocks"; "Mixing"; "Tack in Shoe Making."

A READY RECKONER FOR WORKING OUT COSTS OF COMPOUNDING ingredients has been compiled in French and English by A. Hutin and is published by *Le Caoutchouc et la Gutta Percha*, 49 Rue des Vinaigriers, Paris (Xe), France. It is printed on a single flexible cardboard sheet the dimensions of which are 10¾ by 16½ inches.

Recent Articles Relating to Rubber

PHYSICS IN THE RUBBER INDUSTRY, WITH SPECIAL REFERENCE TO TIRE MANUFACTURING. A paper read before the Institute of Physics, April 29, 1925, discussing the work of the physicist in a tire factory.—Walter Makower. *Rubber Age*, London, June 1925, 193-197.

RUBBER FROM AMMONIATED LATEX.—O. De Vries, R. Riebl and N. Beumée-Nieuwland. *Rubber Age*, London, June 1925, 198-203.

SOME PROBLEMS OF THE PAINT AND RUBBER INDUSTRIES. A paper read before the Oil and Color Chemists Association, London, April 23, 1925. Indicates analogous problems in the rubber and paint industries.—B. D. Porritt. *Rubber Age*, London, June 1925, 209-211.

VULCANIZATION AND ACCELERATION. PART II. SERIAL. André Dubosc, *Rubber Age*, New York, May 25, 1925, 132-133. June 10, 1925, 168-169.

MASTICATION AND MIXING.—Anonymous. *India Rubber Journal*, May 23, 1925, 819-823.

THE JOULE EFFECT.—R. W. Lunn. *India Rubber Journal*. May 30, 1925, 851-854.

RECENT DEVELOPMENTS IN THE RUBBER PLANTING INDUSTRY. Report by Herbert Ashplant. *India Rubber Journal*, May 30, 1925, 859-863. June 6, 1925, 905-908.

TOTAL SULPHUR IN RUBBER.—F. H. Alcock. *Analyst* 49, 579 (1924).

JELUTONG. ITS PREPARATION AND KEEPING QUALITIES.—V. R. Greenstreet, *Malayan Agricultural Journal*, 1925, 13 1-8.

DETERMINATION OF VISCOSITY OF RUBBER IN ACIDIFIED BENzene.—O. de Vries. *Archief voor de Rubber Cultur*, 1925, 9, 2.

MECHANICALLY FORCED ANISOTROPY OF RUBBER.—Dr. L. Hock, *Chemiker-Zeitung*, June 3, 1925, 467.

COLLOID CHEMISTRY OF RUBBER LATICES.—Dr. K. Gottlob. *Gummi-Zeitung*, May 22, 1925, 1226-1227.

A FURTHER CONTRIBUTION TO THE COLLOID CHEMISTRY OF RUBBER LATICES,—BALATA,—Ernest A. Hauser, *Gummi-Zeitung*. —Dr. Heinrich Feuchter, May 15, 1925, 1165-1167. Illustrations, diagram.

VOLUME CONTRACTION IN THE FORMATION OF ANISOTROPIC RUBBER SYSTEMS THROUGH STRETCHING.—Dr. Heinrich Feuchter, *Gummi-Zeitung*, May 15, 1925. 1167-1168.

RUBBER FROM AMMONIATED LATEX.—O. de Vries, R. Riebl, and N. Beumée-Nieuwland. *Archief voor de Rubbercultuur*, March, 1925, 345-391. Tables, charts, abbreviated English version.

OBSERVATIONS ON LINING LATEX VESSELS.—Dr. W. Bohilioff. *Archief voor de Rubbercultuur*, March, 1925, 313-342. Illustrations, English summary.

THE MANUFACTURE OF RUBBER CARPET.—Formulæ for white, red, blue, black rubber tiles.—J. Loudier, *Le Caoutchouc et la Gutta Percha*, April 15, 1925, 12626.

THE RECOVERY OF VOLATILE SOLVENTS.—A. D. Luttringer. Serial article. *Le Caoutchouc et la Gutta Percha*, April 15, 1925, 12627-12629.

FURTHER STUDIES OF JELUTONG.—V. R. Greenstreet. *Malayan Agricultural Journal*, January, 1925, 1-8. Chart, tables.

A REPORT ON THE COMPARISONS OF CERTAIN LATEX AND NONLATEX PAPERS.—J. H. Dennett, *Malayan Agricultural Journal*, March, 1925, 79-91. Tables.

PLASTICITY DETERMINATIONS IN CRUDE RUBBER.—II. Influence of certain factors in the field and in the preparation on the plasticity and viscosity in acidified benzene as; and—

PLASTICITY AND VISCOSITY IN SPECIAL RUBBER TYPES.—III. Dr. O. de Vries. *Archief voor de Rubbercultuur*, April 1925, 409-434 and 446-458. Tables.

COMPARATIVE SMALL ADVANCES IN TIRE PRICES

Americans are paying more than half as much again for most commodities as they did ten years ago. But not in the case of tires. Although rubber has advanced more than three hundred per cent during the past year, the price of tires has advanced less than ten per cent. Tire prices today are almost fifty per cent less than they were in 1920, the year of the slump in the tire production field. A concrete illustration of the decrease in prices is shown in the following comparison of tire prices.

	1910 Prices		1920 Prices		1925 Prices	
	Fabric Cases	Grey Tubes	Cord Cases	Grey Tubes	Cord Cases	Grey Tubes
30x3½	$36.75	$7.75	$35.90	$3.75	$13.80	$1.95
32x4	52.70	10.10	56.40	5.25	22.75	2.95

The 1925 prices are the average selling prices used by dealers today and the 1910 and 1920 prices are what is known as consumer's prices in effect at that time.—*Miller News Service*, Akron, Ohio.

New Goods and Specialties

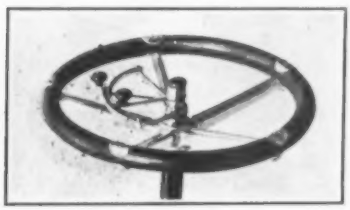
Iodin Pencil With Rubber Cap

A SOLID iodin pencil, which may be carried in the pocket or kit and used in emergencies, is being placed on the market in New York City. This device consists of a strong glass tube containing a glass spindle, which is protected by a rubber cap. The spindle has an active point consisting of a solid composition of iodin. In use, the spindle is withdrawn from the tube, the wound is moistened and the point of the spindle applied to it. The composition being soluble, the iodin may be accurately localized. This pencil is especially recommended for treating the bites of mosquitoes and other insects.—Boston Iodin Co., Boston, Massachusetts.

Solid Iodin Pocket Pencil

Rubber Steering Wheel

Although rubber steering wheels are no novelty, the patented Mack Wheel is new in that soft rubber, instead of the usual wood or hard composition is used. While stiff enough to give ample guiding control, it possesses enough flexibility to damp out nearly all steering column vibrations. It affords a firm grip whether wet or dry, providing a hold for woolen gloves, thus eliminating any need for notches or grooves. In construction this wheel consists of a metal case, embedded in molded rubber, over which is an outer jacket of rubber composition now very popularly used in non-skid tire treads. This composition is peculiar in that, unlike most rubber, it does not become slippery when wet with water or oil. The flexible steering wheel, it is claimed, possesses also the important safety advantage of pliability. In case of collision, a rigid wheel will splinter under a severe blow, forming a real danger to the driver; under similar conditions, the rubber wheel will merely bend. —International Motor Co., 25 Broadway, New York, N. Y.



The Mack Steering Wheel

Double Chin Reducer of Rubber

This new double chin reducer is made of light weight Pará rubber, and can be worn with comfort both day and night. It will fit any face, and can be adjusted to any position, because of a patent hand catch attachment.—Poole's Stringless Specialties, 351 West 25th street, New York, N. Y.

Poole's Chin Reducer Adjusted to Position

Two-Color Rubber Tee Pins

For the golfer a rubber tee pin illustrated is offered, which, according to the manufacturer, not only can be easily seen, but also will not chip or crack when hit by a club. Using this pin, the player has control of the height to which he prefers to tee his ball and is able to keep hands, clothes and club grips free from sand, an advantage especially to women golfers. Faultless Rubber Top Tee consists of a red wooden stem on which is mounted a white molded rubber top shaped to hold a golf ball. This particular color combination makes the pin more discernible.—The Faultless Rubber Co., Ashland, Ohio.

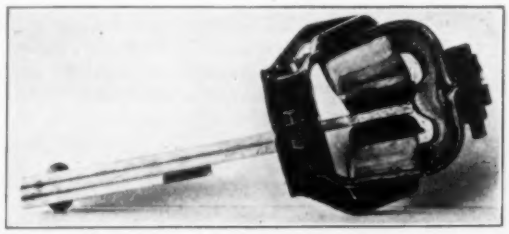
Faultless Rubber Top Tee Pin

Hose Nozzle and Stationary Spray in One

The "2 Purpose" sprinkler, made and guaranteed by the Chicago Flexible Shaft Co., 5600 W. Roosevelt street, Chicago, Illinois, combines the requirements of a pistol grip hose nozzle and of a stationary garden spray. It may easily be changed from nozzle to spray by simply loosening the wing nut and giving the hose connection a one-quarter turn and then tightening the nut. This sprinkler operates efficiently under any pressure. As a stationary spray it covers a circle forty feet in diameter and as a hose nozzle gives the user a range of fifty feet and any desired spray from a fine mist to a heavy compact stream, just by turning the stem.—W. H. Salisbury & Co., Inc., 308-310 W. Madison street, Chicago, Illinois.

Rubber Shock Insulators

The two Duesenberg cars which came in first and third at the Indianapolis Races, Decoration Day, were both equipped with rubber shock insulators. The success of these cars and of the model which came in first last year and which was also rubber shock insulated, can be attributed partly to this unique suspension. This spring mounting greatly absorbs shocks and vibrations, reducing the wear and tear on the chassis and units, affording a certain amount of flexibility which materially affects the action of the car. The absorption of stresses and strains relieves the different car units of added burdens and allows the springs to function as they should. The rubber shock insulator is a spring shackle which, as its name implies, is made of rubber, and replaces the customary steel shackles, bolts, bushings and grease or oil cups. This type of equipment has been giving consistent service over long periods of time on Yellow cabs and Mack trucks and buses.—The Rubber Shock Insulator Co., Inc., 252 West 64th street, New York, N. Y.



Rubber Spring Shackle

A Pipe That May Be Smoked Lying Down

The Orlick block pipe illustrated, with its long coil of tubing and massive bowl to insure coolness, is being introduced in London. It is hand-cut from a solid block of high grade Corsican Bruyère root, already broken in by a special baking process, and might well seem to be the last word in comfort for the smoker.

Courtesy of Scientific American.

Orlick Block Pipe

Tire for Trucks and Buses

The Corduroy Tire Co., Grand Rapids, Michigan, announces an addition to their line of sidewall protection tires which will appeal to all users of truck and bus tires. The sidewall has been made extremely flexible by adding extra strong, sturdy ribs parallel with the tread, and completely around the circumference of the casing, which provides a hinging point between each rib of rubber. This new type of tire is designed and constructed in a slightly flattened shape, somewhat different from the ordinary truck tire construction. By flattening the tire it is shaped exactly as it would appear under a heavy load, making possible a wider tread and greater traction surface without the danger of a heavy shoulder of rubber at the hinging point. Greater traction surface means greater carrying capacity, and consequently longer and more satisfactory service.

Corduroy Heavy Duty Tire

A Bathing Cap to Fit the Ears

A variation of the usual diving model in rubber bathing caps illustrated is designed with a puffed out portion at the sides to provide space for the ears. By this new device, the wearer is assured of greater comfort and is saved the inconvenience of a too constricted covering. The other features are those of the usual molded aviator design. The cap is fastened under the chin with a strap and buckles and fits smoothly and snugly. It may be obtained in various colors.—The Miller Rubber Co., Akron, Ohio.

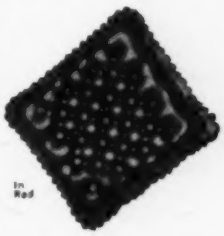
New Model Diving Cap

Tile-Tex Flooring

A new tile flooring, known as "Tile-Tex," is made from a combination of rubber, mineral, etc. It contains approximately the same proportion of rubber as vulcanized tiling. However, it is not vulcanized and the makers claim that it is one of the most permanent floors extant, outlasting cured rubber, linoleum and all types of mastic and magnesite floors. It is resilient, acid and water proof and will not crack. Tile-Tex is made rectangular 9 by 9, 12 by 12 and 12 by 24 inches; any squares damaged by unusual conditions may be easily replaced.—Flexible Slate Products Co., 1232 McKinley avenue, Chicago, Illinois.

Rubber Airo-Cushion

The jobbing trade will be interested in this tufted pneumatic cushion, or mattress, so constructed that the air pressure is carried within the cushion, leaving the outside surface very soft. Being made entirely of elastic rubber, with no seams to leak or catch the dirt, it is washable, sanitary and waterproof, besides being one of the most decorative rubber articles it is possible to make. It requires no pump, and when folded occupies little more space than a pair of gloves. Physicians recommend it as a protection to the spinal column, and, therefore, a great relief to those who must lie in bed or sit a long time.—The K & W Rubber Co., Delaware, Ohio.



Tufted Pneumatic Cushion

Abdominal Supporter with Hard Rubber Springs

The "Premier" abdominal supporter illustrated is claimed to be more durable than the cushioned appliances. It is easily applied and removed, does not bind the hips and is entirely sanitary. The front pad has a bow spring that is adjustable, if more uplift is required. Hard rubber springs with key holes in the ends, hook on to the studs of the bow spring and provide a firm inward and outward support. The supporter is designed especially for use in cases of enteroptosis, visceroptosis and intestinal stasis.—Wm. H. Horn & Bro., Inc., 451-457 North Third street, Philadelphia, Pennsylvania.

Back View

Textile Effect in Rubber Household Aprons

The makers of the "Randprint" rubber aprons illustrated for household use claim that they have developed a new and extremely successful idea in these goods. The designs of the aprons are in textile effect and are sharply color etched into the sheet rubber, becoming actually a part of the rubber itself and are guaranteed not to wash off, crack or peel. This process of decorating rubber is a secret method originated and controlled by the manufacturers. The "Randprint" aprons are now being produced in ten designs and twenty color combinations.—Brooklyn Shield & Rubber Co., Sumner avenue and Halsey street, Brooklyn, New York.

"Randprint" Rubber Household Aprons

Rubber Car-Washing Sponge

The car-washing sponge illustrated is made almost entirely of rubber. The Sorbo rubber sponge, which may be had in large or small size, has affixed to the back a rubber plate and from this a section of rubber tubing leads out, terminating in a coned and corrugated hardwood union which can be slipped into the end of any hose pipe. When the water is turned on a steady stream percolates through the sponge, washing away grit and dust without danger of scratching or destroying the polish.—Sorbo Rubber Sponge Products, Ltd., Sorbo Works, Woking, England.

Rubber Sponge for Automobiles

Improved Rubber Overshoes for Women

As an interesting addition to its line of elastics, the Hood Rubber Products Co., Inc., Watertown, Massachusetts, offers the "Snug," a different type of foothold for women. This elastic is made with rubber upper and sole with an elastic, flexible knurling at the edge of the sole which, the manufacturer states, makes the "Snug" fit any last and makes them particularly appeal to women who wear different shoes for different occasions and have found difficulty in obtaining satisfactory containers. The flexible knurling curls over the edge of the shoe and molds itself to the contours smoothly. The stretchable construction of the "Snug" permits it to conform to various styles and shapes of women's shoes.

"Snug" Overshoe

British Pram Tires

Two forms of tires specially designed for convenient attachment by hand to perambulators, scooters, etc., are here pictured. The cushion form is made of white rubber, ribbed tread and fitted with patent "Interlock" spring wire. It is made in a range of sizes from 5/8 to 1¼ inch diameter suited for wheels from 10 to 28 inches in diameter.

The Perambulator tiring form is more like an ordinary solid baby cab tire with the added feature of an embedded spiral wire, which interlocks by hand to unite the tire in a continuous band on the wheel. This type tire is made in three qualities and

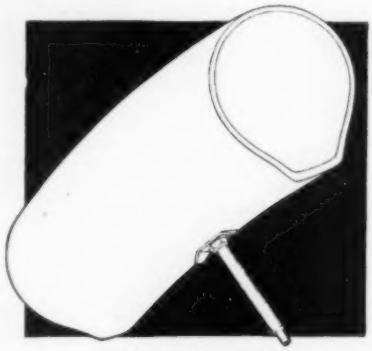
Werneth-Pedley Cushion Tires

styles, in grey and white rubber of high quality. The range of sizes extends from 3/8 to 1¼ inches.

The patent coiled wire joint of these tires has two great advantages, (1) the large diameter coil does not cut through the tire, and (2) the tires can be easily sprung on by hand without the use of tools, and are therefore eminently suitable for replacement work.—Werneth Rubber Works, Limited, Burton-on-Trent, England.

New Balloon Tire Tube

A new type of inner tube designed specially for use in low pressure tires is being offered to dealers and will be sold under the trade name of "Tireshape." This tube will, however, be manufactured to fit every size of straight side tires. It is molded in one piece with valve stem in place, and finally shaped to the inside of the tires so that stretching under inflation is avoided. No flap is required, but one may be used. Vulcanization is obtained in one operation which means uniform "cure," uniform strength and a tight and lasting union of the valve stem with the tube. Due to the lack of tension, the "Tireshape" is puncture resistant and if perforated, deflates slowly.—The Seiberling Rubber Co., Akron, Ohio.



"Tireshape" Inner Tube

Tirefit Inner Tube

This tube is molded in one piece with the valve stem in place. There are no seams to crack open, no thick, uneven humps in the rubber and, because it is narrow, it slides easily into the casing without the slightest effort and stays there. No pushing—no tire stretching—no pinches when tools are used to apply the rim. It expands evenly into place with the rubber compressed on the rim inside and as it is designed to fit the tire perfectly, there is practically no stretching under inflation. The Lee Tirefit tube has the stem vulcanized in place, there is no air seepage around the valve stem or through enlarged pores in the rubber. It conforms with the many undulations of a balloon or semi-balloon when riding, and motorists, not using balloons, can use lower pressure without damaging the tube.—Lee Tire & Rubber Co. of New York, Inc., 33 West 60th street, New York, N. Y.

Lee No-Kink Tube

Insulating the Foot

The "Kendex" insole is made of waterproof fiber and is porous. It absorbs perspiration quickly and, the manufacturer claims, brings increased comfort to the wearer. It insulates the foot especially when used in shoes with rubber soles. As these insoles are non-conductors they keep the foot warm in winter and cool in summer; they eliminate friction, are fast color and always remain flexible. They may be used in many types of shoe, especially in sport shoes, and are extremely durable and always give uniform service.—Kenworthy Brothers Co., Stoughton, Massachusetts.

The Obituary Record

Secretary of John Royle & Sons

ON June 5, Heber Royle, secretary of John Royle & Sons, Paterson, New Jersey, died at St. Joseph's Hospital, Paterson, after an illness of only twelve days.

Mr. Royle, who was fifty years of age, was born in Paterson and educated in the schools of that city. From boyhood his interests had centered in the company with which his father and brother were associated, and which specialized in the manufacture of rubber machinery. Becoming a member of the firm, Heber Royle was also serving at the time of death as secretary.

Heber Royle

A devoted member of the Second Presbyterian Church of Paterson, Mr. Royle was also a Mason, and connected with various fraternal organizations. He was a quiet, observant man, deeply interested in the success of his company, and also in the welfare of his city. He was a student of Paterson's industrial life, and his passing is regretted by many friends and business associates. He is survived by his widow, Edna Atkins Royle; three daughters; his father, Vernon Royle; and his brother, Vernon Elmer Royle, the latter the mechanical engineer of John Royle & Sons. The interment will be in Cedar Lawn cemetery.

Inventor of the Storm Slipper

William Bradford Kinsley, for forty years prominently identified with the production end of the rubber shoe business, died November 29, 1924, in his seventy-fifth year, at his home in Rock Island, Illinois.

Mr. Kinsley was born in Stoughton, Massachusetts, March 21, 1850, and was educated in the Stoughton schools and Stoughtonham Institute. His entry into the rubber business was made in 1885 with the Boston Rubber Shoe Co., Malden, Massachusetts, as pattern man and designer. He was the inventor of the storm slipper which has been widely worn. Later he was superintendent of this firm's last plant until 1898, when he went to Montreal, Canada, to become superintendent of the Canadian Rubber Co., where he remained three years.

He then joined the Atlantic Rubber Co., Providence, Rhode Island, where the molded shoe was being tried out. This firm was taken over by the United States Rubber Co., with which Mr. Kinsley was connected for a time, after which he went to the Mishawaka Rubber & Woolen Co., Mishawaka, Indiana, to introduce a line of light rubber footwear.

After nine years with the Mishawaka company, Mr. Kinsley went to Rock Island, Illinois, when the Servus Rubber Co. was organized. He designed and made the sample line of this firm's present output and had begun on another line of rubber footwear for the Servus company.

Mr. Kinsley was the style pioneer and arbiter in footwear fashion for years. He was a bright, active man with the temperament of the true artist. Alert, aggressive, full of nervous energy, he made hosts of friends whom he cherished with a deep and unfaltering devotion. The trade has lost a very interesting and individual figure.

Treasurer of United Shoe Machinery Corporation

After a lifetime of conspicuous services in the causes of business, politics, literature, and public welfare, Louis A. Coolidge, former Assistant Secretary of the Treasury, passed away on May 31 at his home in Milton, Massachusetts. Although his activities were so various, Mr. Coolidge was probably best known in the business world as treasurer and director of the United Shoe Machinery Corporation, Boston, Massachusetts, a position which he assumed in December 1909, and had only recently resigned. He was also at the time of his death vice-president and director of the American Zinc, Lead & Smelting Co., and a director of six other business organizations. Mr. Coolidge was born on October 8, 1861, at Natick, Massachusetts, where he received his early education, entering Harvard in 1879, and being graduated from that university with *magna cum laude* in 1883. He is survived by his widow, a son, and two daughters.

United States Rubber Co. Attorney

Kennedy M. Thompson, an attorney and a member of the legal staff of the United States Rubber Co. in New York, N. Y., died May 19 at the age of 44 following an operation which had not been regarded as serious. His unexpected and untimely passing came as a great shock to his many friends and associates.

Kennedy M. Thompson

Mr. Thompson was born in Brooklyn, New York, February 15, 1881. As a boy he attended grammar school and Mercersburg Academy. He was seventeen years old when he secured a position as office boy with the United States Rubber Co. Encouraged by his superiors, he took up night study at a preparatory school, and in 1910 completed a course at the New York Law School and was admitted to the bar.

Meantime he had become a department bookkeeper, but in 1911 was transferred to the secretary's department and thereafter worked into the company's legal activities, devoting a large part of his time to taxation matters after 1917.

His twenty-seven years of faithful, energetic and capable service to the company was a splendid record of rapid progress and achievement in his profession, and in that time he established himself firmly in the respect and affection of the entire headquarters organization.

At the time of his death he was a member of the Lotos Club, the West Side Tennis Club and the New York Bar Association. He was talented as a pianist and had a keen appreciation of art. His wife, known to the art world as Della Shull, has won high honors as a portrait painter.

Former Associate Editor of India Rubber World

Charles E. Bevington, who died June 7, 1925, in Brooklyn, N. Y., was for years an editorial writer attached to London daily newspapers. He also did much work in book reviewing, and did critical essay work for leading magazines. Late in life he came to New York and did excellent work on various daily papers. At one time he served for two years as associate editor of THE INDIA RUBBER WORLD, leaving that position for daily newspaper work.

Activities of the Rubber Association of America

AFTER an exchange of several cables with the Rubber Growers Association in the hope of securing some relief in the crude rubber situation, the Rubber Association received the following cable from Eric Miller, chairman of the R. G. A.:

London, June 5.

Viles
Rubber Club.

From tone of your cable it would appear your members do not realize their own share of responsibility for present situation which would never have arisen if they had shown reasonable foresight and pursued sound buying policy during past twelve months instead of hand to mouth. Working on your figures assuming usual season slowing down July, August, and 10 per cent releases August and November. I calculate lowest point crude stocks will be passed this month. Am struck by absence of American orders for 1926 even at enormous discount. What is the explanation? MILLER.

After receipt of this cable a special meeting of the Board of Directors was held in Akron, Ohio, on June 11, to consider what action should next be taken by the Association. A round-table discussion was had concerning every important phase of the matter and many suggestions were offered for remedying the situation. The more important are referred to in the following, with a statement of the action taken with respect to each.

Proposed Cable to Stevenson Committee

It was found that there were many different opinions respecting a cable response to the above message from the Stevenson Committee dated June 5. Therefore, it was decided to ask the Chair to appoint a committee of five to prepare and send a suitable cable. For this purpose President Rutherford appointed Messrs. Stadelman, Seiberling, Hood, Pfeiffer and Broadwell.

Selling of Surplus Stocks

As the result of a suggestion that a crude rubber pooling plan be adopted, the Board of Directors authorized the Association to operate as a clearing house of information between manufacturing members, as to the willingness of one manufacturer to sell crude rubber and the desire of another to purchase rubber during the period of the emergency.

It is expected that such selling and buying between manufacturers will aid in lessening the demands upon the crude rubber market and thus may tend to relieve the present situation. The Board of Directors approved this procedure with the understanding that the market terms and conditions prevailing at the time would be the basis for transactions between manufacturing members.

Collective Rubber Buying

Messrs. F. C. Hood, M. E. Clark and A. L. Viles were appointed a committee to confer with the Federal Trade Commission concerning a crude rubber buying committee or corporation and other matters, the committee to have the privilege of inviting other members of the Board to participate in their negotiations with the Federal Trade Commission, if desired.

Negotiation with Dutch Government

The same committee which is to confer with the Federal Trade Commission, constituted of Messrs. Hood, Clark and Viles, was requested to approach the government officials in Washington for the purpose of establishing contact with the Netherlands Government and endeavoring to obtain authoritative data and an understanding regarding the conditions under which American capital might be invested in rubber growing in Dutch territory.

Conservation Program

Many suggestions had been offered for conservation of both the rubber and financial resources of the manufacturers with respect to the present speculative situation in crude rubber. The Board of Directors did not regard favorably the suggestion that there be an arbitrary uniform curtailment of production on percentage basis, nor the suggestion that there be a temporary complete shut-down. Neither did the suggestion that a crude rubber exchange be fostered meet with approval.

The pooling of rubber on hand or on contract for delivery in June or July was not favorably regarded, except insofar as the Association was authorized to operate as a clearing house of information between manufacturing members as to the willingness of one manufacturer to sell crude rubber and the desire of another to purchase rubber during the period of the emergency.

Those matters of a conservation nature, which the Board of Directors thought well to advocate, are all covered in the following:

The seriousness of the situation represented by the prevailing high price of crude rubber and the determination on the part of the rubber goods manufacturing industry to do everything possible to protect the interests of the American consuming public was indicated by the fact that the directors of The Rubber Association of America, Inc., met in Akron to discuss remedial measures.

A careful survey of the industry situation indicated that vigorous action along the line of conservation practices can be taken without adversely affecting service to the public.

Definite action was taken to reduce excessive inventories now being carried by manufacturers and dealers; first, by substantial reduction in the number of types and sizes of tires, footwear and mechanical goods; second, by the abandonment of all interchangeable balloon tire sizes; third, the elimination of all second quality lines of tires; fourth, postponing for five months solicitation of orders for spring dating, no shipments on such orders to be made before 1926.

The art of reclaiming rubber having been greatly advanced through improvement in quality, permitting its wider use, and as additional capacity in excess of 2,000,000 pounds monthly will be available within the next sixty days, and as plans for larger, further extensions are under way, it is believed that the present distressing situation will shortly be relieved. A committee was appointed to confer with the Dutch Government with the end in view of arranging satisfactory terms for the investment of American capital in growing of rubber in Dutch possessions.

The Board of Directors wishes to emphasize that the success of the conservation program will depend in a large measure upon immediate and diligent action by the members through the medium of the various divisions and committees of the Association. Meetings of these groups will be called at an early date for the purpose of giving consideration to definite plans and recommendations.

The Board of Directors will, of course, continue to keep in close contact with the situation and engage in such further communication or negotiation with the Stevenson Committee as seems to be advisable. Also, the board will continue to watch the domestic situation and take such action as may become feasible as conditions change.

THERE HAS BEEN AN ENCOURAGING ADVANCE DURING THE FIRST quarter of the present year in American exports of mechanical rubber goods, the totals being as follows: January, rubber belting, $172,677; hose, $119,759; and packing, $58,485. The February figures include a value of $133,337 for rubber belting; $128,088 for hose and $41,112 for packing, while the March totals rose to $197,947 for rubber belting, $163,570 for hose, and $81,659 for packing.

News of the American Rubber Trade

Rubber Industry Outlook

THE peak of the spring demand for automobiles has passed but production is being maintained and sales are sufficient to take up the output. The call for tires continues undiminished due to the need of the dealers to replenish their stocks which were held to minimum during the winter months. Balloon tires are steadily gaining in popularity but since several seasons will elapse before they will entirely displace high pressure tires dealers are obliged to stock both kinds. Largely owing to this fact tire production continues at capacity rate with no immediate reduction of output in sight.

Two important features at present agitate the rubber manufacturing industry. Chief of these is the high price to which crude rubber has been steadily advancing for the past year, forced upward by restriction of production of British controlled plantation grades. The heavy purchases by American manufacturers have exhausted practically all stocks of spot rubber and although London stocks were reported June 22 at 5,427 tons, half of this is destined for British and Continental use, and the remainder is not enough to count even though it were all of highest quality.

American rubber manufacturers view the crude rubber situation with some concern and early in the month voiced their protest at the meeting at Akron of the officers of the Rubber Association of America, and ineffectually sought relief from the shortage and high prices by an appeal to the British Colonial Office through Secretary Hoover. The manufacturers plan to lessen as far as possible their crude rubber consumption by utilizing reclaimed rubber to greater extent and developing the advantages afforded by reinforcing and plasticizing ingredients. In some branches of the industry these measures have reduced crude rubber needs by 30 per cent. These measures of conservation have stimulated the reclaimed rubber output rate fully 25 per cent.

The second disturbing factor recently entering the tire situation was the announcement to all balloon tire manufacturers that they are infringing the Putnam balloon tire patent. This position will be strongly contended by the manufacturers who claim that the patent was granted without full knowledge of the history of the cord tire.

Manufacturing activity in the trade divisions of footwear, mechanicals, insulation, hard rubber, etc., is well maintained. Prices for goods have not yet been advanced the full amount justified by the crude rubber situation and the maintenance of quality.

Financial

Akron Rubber Stock Quotations

Quotations of June 20, supplied by Otis & Co., Cleveland, Ohio.

COMPANY	Last Sale	Bid	Asked
Faultless com.	28	27⅛	28
Firestone com	116½	116½	117
Firestone 1st pfd	100	100	100½
Firestone 2nd pfd	98	97	99¼
General com.	240	...	240
General pfd.	103	101¼	...
Goodrich com.	53	...	...
Goodrich pfd.	99⅜	...	...
Goodyear com. V. T. C.	32½	32	34
Goodyear pfd. V. T. C.	100	...	...
Goodyear pr. pfd. V. T. C.	104¼	105	105⅜
Miller com.	165	...	160
Miller pfd.	103	103	104
Star com.	17	...	...
Star pfd.	30	...	...
Swinehart com.	10	...	20
Victor com.	½	½	¾
Victor pfd.	...	...	...

New York Stock Exchange Quotations

June 22, 1925.

	High	Low	Last
Ajax Rubber, com.	15½	14½	14¾
Fisk Rubber, com.	18⅞	18½	18½
Fisk Rubber, 1st pfd. (4)	103	100½	100½
Goodrich, B. F., Co., com.	52¾	52	52
Goodyear Tire & Rubber, pfd. (7)	102¼	102	102
Goodyear Tire & Rubber, pr. pfd. (8)	105⅛	105	105¾
Kelly-Springfield Tire, com.	18¼	18	18¼
Keystone Tire & Rubber, com.	2⅝	2½	2½
Lee Rubber & Tire, com.	14⅜	14¼	14¾
United States Rubber, com.	47	46¼	46¼
United States Rubber, 1st pfd. (8)	102¾	102½	102¾

Dividends Declared

COMPANY	STOCK	RATE	PAYABLE	STOCK OF RECORD
Canadian Consol. Rubber Co.	Pfd.	1¾% q.	June 30	June 23
Firestone-Apsley Rubber Co.,	Pfd., reg. semi-an.	3½%	July 1	June 27
Goodyear Tire & Rubber Co.	Pfd.	$1.75 q.	July 15	June 20
Goodyear Tire & Rubber Co. of Canada	Pfd.	1¾% q.	July 2	June 19
Goodyear Tire & Rubber Co. of Canada	Pfd.	1¾ accum.	July 2	June 19
Hood Rubber Co.	Com.	$1.00 q.	June 30	June 20
Hood Rubber Co.	Pfd.	$1.75 q.	Aug. 1	July 20
India Tire & Rubber Co.	Com.	$2.00 q.	July 1	June 20
India Tire & Rubber Co.	Pfd.	1¾% q.	July 1	June 20
Overman Cushion Tire Co.	Pfd.	3½% semi-an.	July 10	June 30
Overman Cushion Tire Co.	Com., class A	1½%	July 20	June 30
Overman Cushion Tire Co.	Com., class B	1½%	July 20	June 30

The Hood Rubber Co.

For the fiscal year ended March 31, 1925, the Hood Rubber Co. reports earnings as ample—after payment of all local, state and Federal taxes and depreciation of plant—to pay interest on $6,000,000 debenture notes, to pay 7 per cent dividends on preferred stocks, and regular dividends amounting to $4 a share for the year on the 120,000 shares of common stock, and also to add a substantial amount to surplus.

Sales for the fiscal year totaled $29,096,635.28 as compared with the estimate for the year previous of $28,248,653.96. Corresponding sales for the twelve months ended March 31, 1923 were $28,180,007.31, and for the 1922 period were $25,239,603.88. The company has been paying regular quarterly dividends on the preferred stock since its first issue, the 68th consecutive quarterly dividend having been paid on February 1, 1925. Regular quarterly dividends have also been paid on the preferred stock of the Hood Rubber Products Co., Inc., since its incorporation, five years ago, while regular quarterly dividends of $1 a share have been paid on the Hood Rubber Co.'s common stock, this rate having been maintained without interruption since the stock was first issued. The consolidated balance sheet of the two companies follows:

ASSETS

Plant	$6,550,000.00
Merchandise and supplies	8,674,440.27
Receivables and advances	7,618,798.36
Prepaid items (including unamortized discount on debenture notes)	639,909.04
Cash	1,117,412.74
Investment in other corporations	61,000.00
Patents	1,000.00
	$24,662,560.41

LIABILITIES

7% preferred stock—Hood Rubber Co.	$5,820,000.00
7% preferred stock—Hood Rubber Products Co., Inc.	1,000,000.00
Common stock, Hood Rubber Co.—(120,000 shares without par value)	6,000,000.00
Debenture notes, 7%, 15 year sinking fund (due December 1, 1936)	6,000,000.00
Notes payable	2,775,000.00
Accounts payable	478,085.91
Hood Rubber Co. Thrift Club	218,940.95
Reserves and accruals (including reserve for 1924 federal income tax)	317,416.32
Surplus	2,053,117.23
	$24,662,560.41

Goodyear Tire & Rubber Co.

In a statement announcing declaration of the second quarterly dividend of 1¾ per cent on the 7 per cent preferred stock of the Goodyear Tire & Rubber Co., President G. M. Stadelman says, "Sales for the first five months are running materially ahead of the same period last year, and a good business for the balance of the year is expected."

Mr. Stadelman pointed out that since the reorganization of Goodyear in 1921 up to the close of business on December 31, 1924, the company has paid off $5,250,000 in bonded indebtedness, reducing total indebtedness to $24,750,000. The company has cut its debentures from $27,500,000 to $23,500,000, and has built up a surplus of $22,798,577. Preferred stock dividends are payable July 15 to stockholders of record June 20.

Filler

New Incorporations

THE CLINTON RUBBER CO., February 28 (Ohio), $10,000. Officers: Allyn R. McCoy, Akron, Ohio, president; E. E. McNeely, Akron, Ohio, secretary; L. N. Oberlin, Akron, Ohio, treasurer; John A. Smith, Clinton, Ohio, vice-president and sales manager; T. S. Briggle, Akron, Ohio, factory superintendent. Principal office, Akron; factory, Barberton, both in Ohio. To manufacture "Ultra" line of transparent rubber products.

ELECTRIC VULCANIZING RUBBER CO., May 21 (Delaware), 7,500 shares, no par value. Incorporators: T. L. Croteau, A. L. Miller and M. A. Bruce, all of Wilmington, Delaware. Principal office, du Pont Building, Wilmington, Delaware, with Corporation Trust Company of America. Manufacture and deal in all kinds of rubber curing and vulcanizing devices.

FEIRMAN TIRE & VULCANIZING CO., INC., June 8 (New York), $5,000. Incorporators: S. Feirman, I. Feirman, both of 940 Simpson street, and H. Feirman, 985 Simpson street, all in New York City. Auto supplies.

THE GISH RUBBER CO., June 17 (Delaware), $500,000. Incorporators: S. L. Mackey, L. C. Christy and H. Kennedy, all of Wilmington, Delaware. Principal office, 901 Market street, Wilmington, Delaware, with The Corporation Service Co. To deal in tires, tubes, casings, accessories and other articles made of rubber, metal or other materials.

KENT RUBBER PRODUCTS CORPORATION, May 14 (Ohio). Incorporators: H. M. Tuesch, president; F. C. Webster, vice-president; G. W. Rouse, secretary and treasurer. Principal office, Kent, Ohio. Manufacture household, surgical and electricians' gloves and finger cots.

BEN LEVEE TIRE & ACCESSORY CO., INC., June 20 (New York), $10,000. Incorporators: Ben Levee, Sarah Levee, both of 57 Beach street, Stapleton, and Lena Levinson, 17 Harbor View Court, Brighton Heights, all in Staten Island, New York.

BEN LEVY TIRE & BATTERY CORPORATION, June 23 (New York), $5,000. Incorporators: Ben Levy, R. E. Levy, both of 1377 Plimpton avenue, and Joseph Levy, 861 Freeman street, all in the Bronx, New York City.

THE LIQUID RUBBER CO., May 15 (Massachusetts), $100,000 preferred and 1,000 shares, no par value. Officers: John N. Worcester, president, John P. Carr, treasurer, and John Abbott, clerk, all of 53 State street, Boston, Masaschusetts. Incorporators: same as officers. Principal office, Boston, Massachusetts. Manufacture and deal in rubber products, liquids and plastic materials.

MOTOR SUPPLY CO., INC., April 15 (Louisiana), $50,000. Officers: William O. Campbell, president; Roy O. Hale, first vice-president; George G. Weaks, second vice-president, and Guy Campbell, secretary-treasurer, all of Monroe, Louisiana. Principal office, Monroe, Louisiana. To deal in hardware and automobile accessories and supplies.

MILTON MUSLINER & CO., INC., June 23 (New York), 12 shares no par value. Incorporators: M. Musliner, 310 Convent avenue; H. A. Mossler, 141 Broadway, and L. P. Eisner, 74 Avenue C, all in New York City. Rubber goods and shoes.

OLYMPIC RUBBER CO., INC., June 8 (Delaware), $250,000, par value $100. Incorporators: S. M. Hakes, 813 Dayton street, Frank H. Gross, 1049 Jefferson avenue, and A. R. Seavees, 585 Clairmont Place, all in Akron, Ohio. Principal office, Dover, Delaware, with the Corporation Trust Co. of Delaware. Manufacture licensed patented devices, wares and rubber goods.

PARAMOUNT INTERNATIONAL RUBBER CO. OF CANADA, LTD., February 27 (Canada), 7,500 shares preferred stock, par value $100, and 25,000 shares common stock, no par value. F. T. Roberts, president, Farnham, Quebec, Canada. Principal office, Montreal, factory at Farnham, Quebec, both in Canada. To manufacture and deal in rubber.

C. E. ROBINSON CO., INC., May 15 (Massachusetts), 101 shares, no par value. Officers: Clarence E. Robinson, 8 Columbus street, Worcester, Massachusetts, president and treasurer; Joseph V. Carroll, 44 Stone road, Belmont, Massachusetts, clerk; Leslie J. Gilbride, 30 Garden street, Roslindale, Massachusetts, director. Incorporators: same as officers. Principal office, Worcester, Massachusetts. Manufacture and deal in knitted elastic webbing and elastic surgical appliances.

SAN ANTONIO WAYNWAY TIRE CO., June 15 (Delaware), $45,000, par value $1. Incorporators: S. L. Mackey, L. C. Christy, and H. Kennedy, all of Wilmington, Delaware. Principal office, Equitable Building, Wilmington, Delaware, with the Corporation Service Co. Manufacture and deal in motor vehicle tires, machinery and other articles of iron, steel, copper and other metals, wood and other materials.

TWEMO CORPORATION, May 25 (New York), 1,500 shares, par value $100, 4,500 shares, no par value. Incorporators: J. V. Mowe, O. S. Tweedy and T. J. Wetzel, all of 250 West 57th street, New York City. Manufacture tires, machinery, etc.

The Rubber Trade in the East and South

Tire and inner tube factories are running to full capacity in the effort to meet the well sustained demand of dealers for stocks for the current season in which balloon and bus tires are figuring strongly. The usual seasonal decline in tire output has been delayed for at least two months owing to the shortage of manufacturers' and dealers' stocks with which the season opened. The call for topping from automobile manufacturers continues in good volume and mills are busy.

Boot and shoe factories are running on summer schedules with output averaging 75 per cent of capacity. Tennis and sport shoes comprise a large proportion of the current product. In one of the larger plants the tennis ticket runs 32,000 pairs daily. At the present time shoe companies are demonstrating their skill in rubber compounding by increasing their use of reclaim to cover 30 per cent of their customary requirement of crude rubber. Heel producing companies are subjected to keen competition in this much overdone line, but are optimistic over prospects of improved conditions in the near future, especially in heels for the jobbing and repair trades.

Mechanical rubber goods mills are active and business for the first half year shows an increase of 15 to 20 per cent over the corresponding period a year ago. Prices have advanced. Insulated wire mills continue to experience good business.

The National Aniline & Chemical Co., 40 Rector street, New York, N. Y., has appointed William R. Moorhouse, formerly in charge of the organization's Boston branch, assistant sales manager in charge of problems of dye application. Mr. Moorhouse was one of the founders of the American Association of Textile Chemists and Colorists, being at present a member of that organization's council and research committee.

On and after June 1, 1925, the Crude Rubber Brokerage Co., Inc., removed its offices to 123 Front street, New York, N. Y. Executives of the organization include: Richard H. Toeplitz, president and treasurer; W. R. Douglass, vice-president; and M. Erenstoft, secretary.

Gustav Drews, 261 Broadway, Room 903, New York, N. Y., has succeeded to the business of practicing trade-mark and patent law as formerly conducted by Francis H. Richards.

Press reports state that A. L. Scheuer, president of the Kelly-Springfield Tire Co., 250 West 57th street, New York, N. Y., has sent his resignation to the company's board of directors, also requesting that it be accepted not later than October 1, 1925. It is understood that Samuel Woolner, Jr., will succeed Mr. Scheuer.

The Ileite Electric Manufacturing Corporation, Tuckahoe, New York, has taken over the plant of the Malone Rubber Co., Malone, New York, and will utilize the factory for the production of bakelite parts, as well as the probable molding of rubber articles for the trade. The Ileite organization has also made arrangements with the Paramount Rubber Consolidated, Inc., whereby it will maintain that company's inner tube equipment and demonstrate the manufacture of tubes by the vacuum process. F. T. Roberts heads the new company.

The Powertown Tire Corporation, formerly at 253-259 East avenue, is now in its new quarters at 270 North Division street, Buffalo, New York.

James C. Given, the newly appointed assistant sales manager of the Dunlop Tire & Rubber Co., Buffalo, New York, has had a wide experience in the rubber industry, having been previously connected with several well-known organizations.

The Bristol Co., Waterbury, Connecticut, specializing in the manufacture of recording instruments, has been erecting a new studio and research laboratory, costing approximately $75,000.

Sales during the present year, as reported by the DeLion Tire & Rubber Co., Highlandtown Station, Baltimore, Maryland, have

increased 100 per cent as compared with the corresponding period a year ago. With the doubling of new accounts, the organization has been compelled to install considerable additional machinery. Prospects for the future are said to be excellent.

An output of 16,000 tennis balls daily has been maintained by the Pennsylvania Rubber Company of America, Inc., Jeannette, Pennsylvania, although weather conditions have recently caused a slight falling-off from this production. The company has also been manufacturing approximately 4,000 tires and 5,500 tubes daily, while equipment is being installed to bring the daily production of tires up to 5,000, the tubes to total 7,500. George W. Daum is vice-president and general manager.

The recently organized Williamsport Die & Machine Co., 917 Nichols Place, Williamsport, Pennsylvania, established more than twenty years ago as the Williamsport Leather Goods Co., specializes in the production of steel blade cutting dies for manufacturers of leather and rubber footwear. The company's additional lines include the production of special machinery, as well as manufacturing and repairing, etc. F. P. Fawcett is president of the new organization.

The Traveler Manufacturing Co., Inc., Bethlehem, Pennsylvania, has acquired the plant and equipment of the bankrupt Traveler Rubber Co., and during the last part of June began the manufacture, under the trade name of "Traveler," of a full line of pneumatic tires and tubes, both high pressure and balloons. The executive personnel of the newly-formed organization includes the following: W. W. Whiting, president and general manager; Walter M. Weiebach, vice-president; J. E. Doan, treasurer; and A. J. Welker, secretary.

A new building, costing approximately $60,000, has been erected by the Goodyear Tire & Rubber Co., Akron, Ohio, for its branch located at 205 East Seventh street, Charlotte, North Carolina. The construction represents one of the larger Goodyear divisions, which will maintain jurisdiction over two other branches at Raleigh, North Carolina, and Columbia, South Carolina. F. W. McConky, Jr., is in charge of the Charlotte branch.

Keith, Simmons & Co., Nashville, Tennessee, dealer in automobile accessories, railroad and mill supplies, etc., has taken over the tire and accessory department formerly handled by Gray & Dudley, also of Nashville.

The Guy Marvin Co., Jacksonville, Florida, has recently begun to handle the tires manufactured by The Miller Rubber Co., Akron, Ohio.

Proposed Crude Rubber Exchange

The Rubber Exchange of New York, Inc., with offices at 250 West 57th street, New York, N. Y., has been established through the instrumentality of F. R. Henderson, well known to the crude rubber industry. The purpose of the new organization is to broaden the market and stabilize rubber prices. Crude rubber importers and dealers will be requested to join the exchange, while it is expected that the larger manufacturers and consumers of rubber throughout the country will give the new institution their moral support.

Westinghouse Organization Holds Annual Meeting

At the annual meeting on June 10 of the stockholders of the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pennsylvania, E. M. Herr, president of the organization, reported stable conditions for the company, with the volume of business continuing on a satisfactory basis.

The only change in the Westinghouse directorate was the election of F. A. Merrick, vice-president and general manager of the company, to the place made vacant by the recent death of A. G. Becker. The following directors were reelected: James D. Callery, Philadelphia Co., Pittsburgh; Paul D. Cravath, of Cravath, Henderson & de Gersdorff, New York; Harrison Nesbit, president, the Bank of Pittsburgh, N. A.; and H. P. Davis, vice-president, the Westinghouse Electric and Manufacturing Co.

Activities of Lambert Tire Distributers

The Forbes-Lambert Tire Co., 78 Broadway, Buffalo, New York, has been organized by William J. Forbes for the purpose of handling the "Trublpruf" tires manufactured by the Lambert Tire & Rubber Co., Akron, Ohio.

The McGee-White Corporation, 1311 Hennepin avenue, Minneapolis, Minnesota, is also distributing this make of casings, the company's territory including Minnesota, Montana, and the Dakotas. The department is under the supervision of R. A. Gray.

Eastern Pennsylvania and southern New Jersey are being covered by the Lambert Tire Co., Inc., Broad and York streets, Philadelphia, Pennsylvania, with Frank Strick in charge.

U. S. Rubber Co.'s New Vice-President

William O. Cutter, for the past four and one-half years comptroller of the United States Rubber Co., was elected vice-president in addition to his former office by the board of directors at its organization meeting on April 23.

William O. Cutter

Mr. Cutter was born in Brockton, Massachusetts, on Christmas Day, 1876. His school work came to an end when he was graduated from the grammar school at Chelsea, Massachusetts, in 1891. He began his business life as an office boy with the Thompson-Houston Electric Co., later the General Electric Co., in Boston. After three years he went to the First National Bank of Chelsea as messenger, and in a few months became head bookkeeper, which position he held until 1898. While he was in school and until the end of his bank work he carried on a job-printing business at his home.

His next connection was as head bookkeeper of a leather commission house for four years, and afterward he served in the same capacity with the Bowker Fertilizer Co. In 1905 he went, for four years, to the Library Bureau as comptroller, and from 1909 to 1915 he devoted his attention to public accounting.

At the beginning of 1916 he took his first position with the United States Rubber Co., doing some special accountancy work. In the fall of 1917 he took charge of factory accounting, and in the spring of the following year he was made assistant comptroller and given charge of factory and general accounting. He has been comptroller since October 7, 1920.

FRONT-WHEEL SHIMMY

At a recent meeting of the S. A. E., J. F. Palmer, consulting engineer of the Hewitt Rubber Co., said that he had attacked the problem of front-wheel shimmy in the last year from the tire standpoint and had come to the conclusion, as the result of numerous experiments, that the amplitude of vibration of the tires synchronizes with that of the springs and causes the phenomena of shimmy. The amplitude can be governed in tires by altering the cross-section to an ellipse whose major axis is parallel with the axis of the wheel. This increases the carrying capacity of the tire by increasing the area of contact with the road, and he said he had demonstrated conclusively that a tire made on that plan would steer easier and eliminate low-speed shimmying and tramping.—*Journal of the Society of Automotive Engineers.*

The Rubber Trade in New Jersey

With tire manufacturing plants operating to capacity and progressively depleting rubber stocks, the rapidly advancing prices of crude rubber are causing some concern in the rubber industry of New Jersey. In some instances the situation has reached an acute stage and manufacturers fear they will be unable to secure the large stocks of crude rubber ordered some time ago. Manufacturers of tires contend that they could not sell their product at present prices if manufactured from crude rubber purchased at present prices. Another advance in cost of tires is expected early in July. Previous advances have been from fifteen to twenty per cent.

The demand for druggists' sundries and brake lining continues good, while there has been a dropping off in the output of mechanical goods.

The Luzerne Rubber Co., Trenton, New Jersey, has adopted a group life insurance policy for their 129 employees, under the terms of which each worker will receive protection of $1,000 without cost. The total amount of insurance involved is $138,000, some of the executives being covered for $2,000. The Ajax company was the first rubber concern in Trenton to issue free life insurance to its employees and has paid out several thousand dollars in death claims.

The Murray Rubber Co., Trenton, New Jersey, reports that the tire and tube department is operating twenty-four hours a day, while the mechanical department is running to capacity. The concern expects to again increase price of tires shortly.

The Ajax Rubber Co., Trenton, New Jersey, will erect an addition, costing $15,000 to the Trenton plant. The company is running 100 percent capacity and has bright prospects ahead. The plant was recently closed for a few days for taking the annual inventory.

Stocks of zinc oxide and albalith are being carried at the Anchor warehouse, New York and Olden avenues, Trenton, New Jersey, by the New Jersey Zinc Sales Co., 160 Front street, New York, N. Y.

The Combination Rubber Co., Trenton, New Jersey, broke all records during last May when more tires and tubes were produced than ever before. It is expected that June will also be a record breaker. The company recently advanced tires about 20 per cent and expects to place another increase in effect shortly.

The Pocono Rubber Cloth Co., Trenton, New Jersey, continues busy on orders for rubber cloth for automobile tops and also for golf bags and tennis rackets. The company expects a good summer season.

The Near-Para Rubber Co., Trenton, New Jersey, announces a large demand for reclaimed rubber following the sharp increase in the price of crude rubber. The concern is the largest reclaiming company in Trenton.

No date has yet been selected for the sale of the plant of the Bergougnan Rubber Corporation, Trenton, New Jersey, but the receiver is tabulating claims against the company. When the company failed there was considerable raw material and tires and tubes in stock.

Michael Gilinsky, head of a group of Trenton men who purchased the plant of the Spartan Rubber Co., near Trenton, New Jersey, announces that the factory is now for sale or rent. The plant is fully equipped for the manufacture of tires.

The high price of crude rubber is booming the business of the New Jersey Rubber Co., rubber reclaimers, Lambertville, New Jersey. The company is operating day and night and is purchasing rubber scrap in large quantities.

The affairs of the Zee Zee Rubber Co. will shortly be settled by the receiver, Harry Klagg, Jr., who is waiting for the United States District Court to pass on a tax claim after which a settlement will be made with the creditors. The company went into the hands of a receiver four years ago and was later sold to the Spartan Rubber Co., which also failed.

Colonel A. F. Townsend, president of The Manhattan Rubber Manufacturing Co., Passaic, New Jersey, recently combined business and pleasure in a trip with friends to Florida.

The Okonite-Callender Cable Co., Inc.

The Okonite Co., with factories at Passaic and Paterson, New Jersey, announces the formation of The Okonite-Callender Cable Co., Inc., the new organization established to offer to the electrical industry the impregnated paper cables made under the patents of Callender's Cable & Construction Co., Ltd., London, England. On July 1, production began at the Okonite-Callender Co.'s new plant in Paterson which is equipped with special machinery, while the plant facilities include a research laboratory, which, with the company's engineering department, have been planned to meet the cable needs of the electrical industry.

The Rubber Industry in Rhode Island

In accordance with announcements made about the middle of June, the Alice Mill of the Woonsocket Rubber Co., Woonsocket, and of the Millville Rubber Co. at Millville, Rhode Island, both subsidiaries of the United States Rubber Co., closed down on June 25, for the summer vacation period of three weeks. The situation will affect approximately 2,500 persons, of whom 1,500 are employed at the Alice Mill. The last day's making was June 25, and the first day of the resumption will be July 20. This shut down is in accordance with the annual custom of several years' recurrence among the rubber footwear factories.

Night work in the shoe division of the National India Rubber Co., Bristol, Rhode Island, has been discontinued after being in operation since April 1, on large rush orders. Beginning June 15, the plant returned to the five days a week schedule that had been in vogue for several months previous to the putting on of the night shift. While there are no heavy bookings the company is maintaining a steady, though limited, production card with a curtailed force. From the present indications, however, it is expected that the factory will be shut down only two weeks during the summer and that there will be good business in the early fall, to continue for a considerable period.

The Carolina Co., Carolina Village, Rhode Island, has settled its recent employment difficulties and most of the employes are now back at work. As the night shift was the only one affected this returns the plant to a day and night shift. Weaving, spinning and carding rooms are now running on full time schedules, day and night, with full complements of employees.

There are some slight signs of improvement for the immediate future, although business has been dull for some time past, Frank J. Gramelsbach, plant manager at the Smith Webbing Co., Pawtucket, Rhode Island, reports. The plant is running five days a week in most of its departments, producing elastic material.

The Kelly Springfield Tire Co., Akron, Ohio, has opened a direct factory branch at the Terminal Warehouse, Providence, Rhode Island.

The East Greenwich Fire District at its annual meeting on June 11, voted to purchase 500 feet of fire hose.

Robert J. Lauder, for the past ten years master mechanic at the Ningret Mill of the Fisk Rubber Co. in Pawtucket, Rhode Island, died June 6.

Zenas W. Bliss, who has been acting as temporary receiver of the Bourn Rubber Co., Providence, Rhode Island, has been named permanent receiver of the company on petition of Stephen W. Bourn, a stockholder and creditor, following a hearing on June 8 at Providence before Presiding Justice Tanner of the Superior Court. The receiver who will take possession of the plant and

operate it, is authorized to borrow not to exceed $25,000 at any one time. Creditors, under the decree, are enjoined from bringing suit against the concern during the pendency of the petition.

Meeting of Chemists and Chemical Equipment Exposition

One of the largest, most interesting, comprehensive and at the same time, important and valuable industrial expositions ever staged in this section of the country was conducted at the State Armory, Providence, June 22 to 27 inclusive by the Association of Chemical Equipment Manufacturers and attracted widespread attention.

The exposition was conducted in connection with the sessions of the annual convention of the American Institute of Chemical Engineers; the Rhode Island Section of the American Chemical Society and the New England and Rhode Island Sections of the American Association of Textile Chemists and Colorists.

With 84 booths depicting in miniature practically every important process used in the chemical industry of this country today, the exposition was said to represent a factory plant valuation of more than $600,000,000. During the convention week, visits were made to several of the local plants engaged in the production of rubber goods and accessories, among these being the Revere Rubber Co., where the manufacture of mechanical rubber goods, golf balls, etc., were studied; and the Davol Rubber Co., where all kinds of druggists' sundries and novelties were seen.

Among the exhibitors were the following: American Hard Rubber Co., New York, N. Y., hard rubber chemical handling equipment pumps (one of which was in operation) and other products in charge of D. Wilkins, H. S. Brady and C. F. Hilldring; The United States Rubber Co., New York, N. Y., hard rubber products, applicable to the chemical and allied industries, in charge of R. D. Doane, K. R. Dyke, C. A. Russ, P. B. L'Hommedieu and E. Pendleton.

The Rubber Trade in Massachusetts

Rubber mills other than those affected by seasonal declines are operating with a fair volume of business under highly competitive conditions. Footwear factories, which have been running only four or five days a week following the spring rush, have now begun or will soon begin their annual summer shut-downs. Some activity in bathing slippers still continues.

Automobile production shows no diminution and tire and tube plants are operating at full schedule with no considerable reduction expected before August first. Low dealer stocks this spring have been an important factor.

The output of standard lines of mechanical rubber goods, such as hose, belting, packing and molded articles, continues on fairly full schedules. Certain sundries and specialties, however, have become seasonally quiet.

Heel capacity has been overdone. Prices are so competitive that profits depend on volume production and small concerns are greatly handicapped. Much business has been lost through the establishment of rubber heel plants by the larger leather shoe manufacturers. Crêpe sole demand this spring has been heavy.

Druggists' sundries, weatherproof clothing and rubber sundries are having their annual period of seasonal slackness and most plants are operating on part time. The active call for insulated wire and rubber flooring, at increasingly competitive prices, continues unabated. Reclaimers are finding a stimulus to their business in the rising price of crude rubber.

At a meeting of the directors of the Firestone-Apsley Rubber Co., Hudson, Massachusetts, Harvey S. Firestone, president of the Firestone Tire & Rubber Co., Akron, Ohio, was appointed president of the first-mentioned organization, and as successor to the late Lewis D. Apsley. Other members of the Massachusetts company's executive personnel include: Leo A. Brown, vice-president; Alden Strong, treasurer; Charles H. Baker, secretary; and Frank H. Chamberlain, assistant treasurer.

The plant, machinery and other assets of the bankrupt Bailey Rubber Heel Co., 60 River street, Beverly, Massachusetts, representing an investment of $125,000, have been purchased at auction for about $40,000 by Fred J. Gleason, proprietor of the Gleasonite Products Co., manufacturer of heels and soles, Brockton, Massachusetts. Mr. Gleason will continue the manufacture of rubber heels at the Bailey plant and also to add a few other rubber products.

Following the resignation of Edgar E. Fay, who for twenty-five years has been in charge of sales, Arthur C. Kingston becomes director of sales of the Boston Woven Hose & Rubber Co., Cambridge, Massachusetts. Mr. Kingston has had over thirty years' experience in merchandising mechanical rubber goods. A native Bostonian, born in 1876, he was from 1894 to 1914 with the Revere Rubber Co., Chelsea, Massachusetts, and from 1914 to 1925 was general sales manager first of the Peerless Rubber Manufacturing Co., New York, N. Y., and later of the Mechanical Rubber Co., Cleveland, Ohio, both subsidiaries of the United States Rubber Co.

Newly installed equipment and the recent relocation of a department are making for increased efficiency in several directions at the plant of the Boston Woven Hose & Rubber Co., Cambridge, Massachusetts. A new duplex motor driven air compressor has replaced the steam driven machine now considered obsolete. It is estimated that it will compress 50 per cent more air with the same amount of coal and through the motor operation will increase the generating output of the turbines at least 10 per cent. A new washer stringing machine will string 100,000 washers per hour and will take care of three molding shifts, full production, in one eight hour shift. Moving the air brake hose making department to another floor of the same building is expected to double capacity.

Charles R. Gow, formerly president of the Associated Industries of Massachusetts, has been elected a member of the board of directors of the Hood Rubber Co., Watertown.

Quincy Tucker, 126 State street, Boston, formerly a rubber planter in British Guiana, is trying to induce the United Fruit Co. to take up rubber planting as a side issue. A conference on the subject is to be held in Boston late in June to which New England rubber manufacturers are invited. Mr. Tucker considers the Dutch East Indies and Brazil to be the two most promising locations for American-owned plantations. Prospective Chinese coolie labor promises to improve the Brazilian situation, he believes.

The Standard Tire Co., 104 Portland street, Boston, Massachusetts, has announced a new sales policy whereby Keystone Cord tires may be purchased on a weekly deferred payment plan. Harry Herman, treasurer of the company, states that the idea is proving itself successful.

Pennsylvania and Tuxedo Vacuum Cup cord tires are now distributed in Boston by the Chandler & Barber Co., 124 Summer street.

George H. Nason, export manager of the Hood Rubber Products Co., Watertown, Massachusetts, is on the membership committee of the newly formed New England Export Club organized by the Boston Chamber of Commerce as a means of aiding exporters in developing foreign markets.

Very satisfactory business during the first quarter of 1925, with an almost equally good showing for the second period, is reported by the Plymouth Rubber Co., Inc., Canton, Massachusetts, specializing in the rubberizing of cloth and the manufacture of sheet rubber goods. Sales of electrical tapes, Plymouth taps and strip soling, and sheet gum products have been especially good, not-

withstanding some curtailment of demand due to the present high price of rubber. Ira M. Hamilburg is general manager.

Now that the Bureau of Foreign and Domestic Commerce has for the first time compiled export statistics by states, Massachusetts finds herself eleventh in the list with a total value of $114,418,430 for 1924. Rubber goods amounting to $4,856,321 stand fourth in the classified list. They were exceeded only by leather and its manufactures, $27,592,109; machinery, $13,412,663; cotton manufactures, $12,515,421.

Figures recently compiled by the Industrial Conference Board indicate that, as an expense item, medical departments as administered in industry today account for a very negligible increase in the payroll and production costs. These costs in representative Massachusetts rubber mills averaged only 82 cents per thousand dollars of production and $3.16 per thousand dollars of payroll. The average for 125 plants in many different industries was $1.03 per thousand dollars of production and $3.62 per thousand dollars of payroll. When this amount is compared with the rates usually charged for compensation insurance alone, it is readily seen that the provision of a fairly complete medical service is not excessive; particularly when the benefits in accident reduction and lessened absenteeism are considered.

Earnings of the United Shoe Machinery Corporation, Boston, for the year ended February 28 were $7,387,741, compared with $8,054,941 in the previous year, $6,547,215 in 1923, $4,594,146 in 1922 and $3,019,871 in 1921. After reserves and preferred dividends, the balance for the common stock was $5,867,148, equivalent to $3.02 a share on the 1,941,395 shares, compared with $3.30 a share in 1924, $3.18 a share in 1923, $1.78 in 1922, and 66 cents in 1921. The profit and loss surplus on February 28 was $23,681,495, compared with $22,423,721 in 1924, an increase of $1,256,774.

Motor Bus Advances in New England

Conditions in New England, where many large cities are only a few miles apart, are ideal for the successful operation of motor buses and trucks. Almost everywhere intercity trolleys are being or have been superseded by motor buses, which are now a common sight on most of the state road thoroughfares. Private companies are now operating long-distance tourist buses as well as long and short-haul freight trucks and moving-vans. And the railroads are rapidly replacing and supplementing their services with motor vehicles. Supplying tires for the large and rapidly increasing number of motor buses and trucks engaged in passenger, freight and express transportation over New England highways, already a big business, promises to assume much larger proportions every year.

The Boston & Maine Railroad, which has thus far confined its motor vehicle operations to supplementary passenger and freight services where the traffic is light, has announced, effective July first, the inauguration of a passenger bus service between Boston and the White Mountains, and between Boston and Portland, Maine, the latter route passing through many seaside resorts as well as busy cities.

Following the lead of the Boston & Maine, the New York, New Haven & Hartford Railroad has filed incorporation papers under the laws of Massachusetts for a $1,000,000 subsidiary company, to be known as the New England Transportation Co., for the purpose of owning and operating motor vehicles for the transportation of passengers, freight, mail, express and other commodities in Massachusetts, Rhode Island, Connecticut and New York, both in interstate and intrastate commerce. The services to be rendered by motor buses and trucks will be supplemental and complementary to existing rail service.

THE DEAD LETTER OFFICE IS A CEMETERY OF LIVE IDEAS entombed in misdirected envelopes. Twenty million letters go there yearly!—*U. S. Post Office Department.*

The Rubber Trade in Ohio

Sales volume of tires and other rubber products in Ohio during the first six months of 1925 has been the largest in the history of the industry, and has exceeded by approximately 20 per cent the total business in the same period last year. Demand for tires, especially balloon tires, has continued unabated, and production schedules have steadily increased since the beginning of the year. No one expects this condition to continue indefinitely, however, and probably there will be a tapering off both in production and shipments during July and August. Rumors are current of a third advance in tire prices, but manufacturers are striving to prevent further increases by reducing crude rubber consumption. Directors of the Rubber Association of America, at a meeting in Akron, recommended standardization of tire sizes, elimination of interchangeable balloon tires and second quality tires, and the postponement for five months of spring dating orders. Casings and tubes have been increased 5 to 20 per cent in the last two months and another advance at this time would not be to the best interest of the industry. Some further readjustment may be made in certain lines, but every effort is being made by the manufacturers to avoid anything further than this.

While it is admitted that a temporary shortage of rubber exists, leaders in the industry are not unduly alarmed over the situation. F. A. Seiberling, president of the Seiberling Rubber Co., and William O'Neil, president of the General Tire & Rubber Co., are among those who believe that measures being adopted for relief of American consumers will soon solve the problem. W. O. Rutherford, president of The Rubber Association and vice-president of The B. F. Goodrich Co., also said before sailing for Europe June 15 that he believed the crude rubber situation would soon be cleared up. Mr. Rutherford is a delegate to the International Chamber of Commerce Meeting in Brussels, where it is understood the crude rubber situation will come up for discussion.

Tire manufacturers have adopted a "watchful waiting" policy with regard to the balloon tire patent granted Alden L. Putnam, of Detroit, Michigan. They have been notified by the Steel Wheel Corporation, assignee of the patent, that they will be infringing unless a license is taken out for the manufacture of balloon tires. It is contended that the patent is not legal, in that the balloon tire has been a natural development, and is not the invention of one man.

Ohio pays twice as much excise tax on tires, accessories and automobile parts as any other state in the union, according to the government report covering July 1, 1924 to March 31, 1925. The total amount was $5,230,999, most of which was paid by Akron tire manufacturers. Increasing agitation favors the abolition of all excise taxes, and it is expected Congress will be asked to take such action at the next session.

The rubber reclaiming branch of the industry is facing a period of prosperity as a result of the continued high prices for crude rubber. A stiffening in price of reclaimed rubber has followed the rise in the crude rubber market.

Capacity of the Philadelphia Rubber Works Co., Akron, Ohio, will soon be increased by 1,000,000 pounds a month, it is announced by John S. Lowman, vice-president and general manager, as a result of improvements now under way. A two-story addition to the factory and an office building are being erected, and new machinery is being installed in the main plant. This is the largest and oldest independent reclaiming concern in the Akron district. Goodyear and Firestone have reclaiming units, but the output is largely taken by their own factories.

Operations have just been started by the Akron Rubber Reclaiming Co., Akron, Ohio, and present production of 10 tons a day will be increased by installation of new machinery. William Welch, formerly with Goodyear, is sales manager, and C. E.

Bishop, former superintendent of Goodyear reclaiming plant, is factory manager.

The B. F. Goodrich Co., Akron, Ohio, is operating at capacity, with a production of about 25,000 automobile casings and 32,000 inner tubes daily. Rubber footwear business also is reported good, although this department is generally dull at this time of the year.

Five cotton mill officials from the South were recent guests of L. A. Watts, Akron representative of Callaway Mills, Inc., 345 Madison avenue, New York, makers of rubber fabrics.

A large number of new houses are being erected at Kenmore, a suburb of Akron, for the use of operatives employed by The Miller Rubber Co., Akron, Ohio.

The Swinehart Tire & Rubber Co., Akron, Ohio, is now operating at full capacity, after curtailment of production for several weeks, due to machinery trouble in one department. Future orders are reported to be considerably ahead of factory output, and demand is heavy for cushion and solid tires.

Dr. W. C. Geer, retiring vice-president of The B. F. Goodrich Co., sailed June 20 for Europe, where he will spend a year in study and research work. Shortly before leaving Akron, Dr. Geer was guest of honor at a banquet of the Akron Section of the American Chemical Society.

Popularity of the new type of balloon tire, recently put on the market by the Miller Rubber Co., has exceeded expectations, and sales have increased approximately 20 per cent, according to officials. Principles embodied in this casing are said to be the nearest approach to an ideal in balloon tire construction.

W. C. Garrigues, formerly in charge of the engineering department, and later sales manager of the William Foundry & Machine Co., is now chief engineer of the tire mold division maintained by The Reynolds Machine Co., Massillon, Ohio. The latter organization reports business conditions as excellent, with operations indicating a considerable increase over last year, which in turn showed a 20 per cent advance over the year previous. O. F. Binford is general manager.

R. E. Cartledge, formerly connected with the Trent Rubber Co., is now as chief chemist associated with the Akron Rubber Reclaiming Co., Akron, Ohio.

The Kelly-Springfield Tire Co., Akron, Ohio, has purchased the plant of the defunct Thomas Rubber Co. at Wooster, Ohio, which was sold by Kelly-Springfield to the Thomas concern two years ago.

The Clinton Rubber Co., Barberton, Ohio, specializes in a line of transparent rubber products, these including both dipped and molded goods. The company's amber-colored cigar holders are said to be popular, while the pacifiers, nipples, and teething rings are claimed to have sanitary and non-absorbing qualities. E. E. McMeely is secretary of the new organization.

The Eckert Tire Sales Co., 706 Tuscarawas street, West, Canton, Ohio, is a manufacturer, jobber and distributer, carrying on both a wholesale and retail tire business. The organization is headed by E. H. Eckert and Harry H. Eckert.

E. J. Benson, for several years branch manager at Richmond, Virginia, and Columbus, Ohio, for the Kelly-Springfield Tire Co., has organized at 200 East Gay street, Columbus, the E. J. Benson Tire Co., which will handle the line of casings manufactured by the Corduroy Tire Co., Grand Rapids, Michigan.

The Mansfield Tire & Rubber Co., Mansfield, Ohio, which some weeks ago acquired the plant formerly owned by the Ashland Tire & Rubber Co., began production on June 1 at the latter's factory. The Mansfield company has been carrying on operations continuously since 1921 on a basis of three eight-hour shifts a day, while sales to date this year have doubled as compared with the corresponding period of last year.

Output of The Columbia Tire & Rubber Co., Inc., Mansfield, Ohio, has been increased, while all the equipment of the Columbiana factory has been transferred to the Mansfield plant. The company has also disposed of its Columbiana property.

Attorney J. W. Jacoby, Marion, Ohio, has been appointed trustee in bankruptcy by the United States district court of Toledo, for the Studebaker-Wulff Rubber Co. An involuntary petition in bankruptcy was filed by the company, Frank G. Kirkbride, of Toledo, being appointed receiver. Assets were listed at $1,155,299, and liabilities at $567,782. Plants were operated in Marion, Carey and Wadsworth, Ohio. Besides tires, the company manufactured rubber belts and mechanical goods.

William M. Perkins, president and general manager, and George H. Jones, secretary-treasurer, of the Mt. Vernon Rubber Co., Mt. Vernon, Ohio, have resigned.

The American Pigment Co., Reed Building, Ravenna, Ohio, has for the last four years been engaged in the manufacture of whiting, refined clays, and various colors. R. C. Allen, secretary and general manager of the organization, was formerly treasurer of the Aluminum Flake Co., of Akron.

Akron Will Celebrate Its Centennial

From July 19 to 23 the city of Akron, Ohio, will celebrate its centennial, and extensive preparations are being made in order to make the event a success. Incidental to the celebration, there will be arranged a comprehensive exhibit of Akron's industrial products, and as representing one of the world's great rubber centers, the rubber manufacturing companies of the city will take a prominent part in the displays.

Tire Prices Again Advanced

Announcement of the second increase this year in tire prices as effective June 1 was made by the Firestone Tire & Rubber Co., Akron, Ohio, this schedule being followed by other manufacturers of standard brands. Under the new ruling every grade of tire, including balloons, is advanced from 5 to 10 per cent.

The official price list sent to the Firestone dealers includes increases of 5 per cent on 3 inch, 3½ inch cord and motorcycle tires and "999" fabric tires. Prices of all other fabric, cord, balloon and solid tires and inner tubes are advanced 10 per cent.

Coupled with the first upward revision May 1 of 5 to 10 per cent, high pressure pneumatic cords, except the 30 by 3½ inch size, and solid tires are now 20 per cent higher than they were at the beginning of the year.

Late in June The General Tire & Rubber Co., Akron, Ohio, announced an advance of 33⅓ per cent in the price of tubes. No change was made in the price of casings. Other tire manufacturers are expected to take similar action.

Star Rubber Co.'s New Appointments

Additions to the sales organization of The Star Rubber Co., Akron, Ohio, include the appointment of J. H. Kraus and W. P. Cochern, who will both cover certain parts of Western and Central New York. Charles E. Hewitt, formerly branch manager at Buffalo, New York, for the Pennsylvania Rubber Co., is now connected in a similar capacity with the Star organization.

H. B. Hankinson, who was formerly connected with the Mohawk company as manager successively of its New York and Boston branches, and who for four years served the India Tire & Rubber Co. as assistant sales manager, is now associated with D. A. Grubb in the sales and distribution department of the Star organization.

C. L. Walker, who has also been connected with the Mohawk company as well as with the Miller and Goodyear organizations, has been appointed by the Star company as manager of its New York City branch.

Sales during the first four months of the present year are 20 per cent greater than for the corresponding period of last year.

The gross business of the organization during 1924 totaled approximately $2,000,000. L. H. Firey is president.

The Rubber Trade in the Midwest

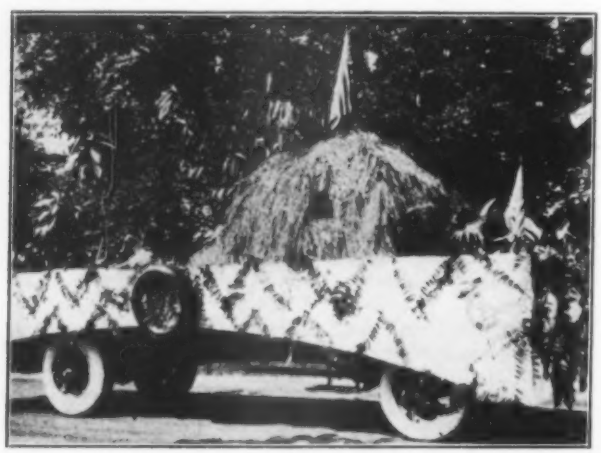
The E. H. Wilson Manufacturing Co., Moline, Illinois, which was incorporated March 5, 1925, has taken over all the business, assets and liabilities of the Moline Body Corporation, as well as the assets of the General Battery & Supply Co. of East Moline, and of the Mineral Rubber Products Co., also of Moline. Operations, which will be immediately begun in the plant of the latter organization, will include the manufacture of battery containers, trays, covers, and a line of mechanical rubber goods. E. H. Wilson is president of the new company.

Net earnings for the year 1924 representing an increase of 12½ per cent, are reported by the Marathon Rubber Products, Inc., Wausau, Wisconsin. The volume of sales for the period also shows a considerable advance. The company's factory has been operated continuously on a full time schedule, while it has been necessary to install additional machinery in order to meet the demand for Marathon goods. During the past twelve months a specialty has been made of the manufacture of black rubber surface clothing. A. Burnett is secretary and general manager.

Louis R. Vautrot, who during the past twelve years has been connected with the engineering and sales-engineering departments of The Cutler-Hammer Manufacturing Co., Milwaukee, Wisconsin, specialist in electric controlling devices, joined on June 1 the sales-engineering force of the company's Milwaukee branch at 530 Grand avenue.

Press reports state that the Blekre Tire & Rubber Co. of Minnesota, Inc., St. Paul, Minnesota, has gone into the hands of receivers. E. O. Blekre, founder of the company and former president, with former Judge Oscar Hallam are the receivers. Current liabilities were reported at $80,000, bonded indebtedness at $500,000 and outstanding capital stock $100,000.

About September 1 another divisional headquarters will be established by the Dunlop Tire & Rubber Co., at 2110 Central street, Kansas City, Kansas. The Kansas City establishment represents one of the twenty-five warehouses and divisional headquarters now being maintained by the Dunlop organization.



FLOAT REPRESENTING A RUBBER PLANTATION DESIGNED AND BUILT BY EMPLOYES OF THE GILLETTE RUBBER CO., EAU CLAIRE, WISCONSIN.

The Century Rubber Works, 54th avenue and 18th street, Chicago, Illinois, reports a net increase in sales for the first five months of the present year of 47½ per cent, as compared with the corresponding months of the year previous. It is believed that after filling orders now on hand the company can show during the next few months an increase for 1925 of approximately 63 per cent.

The Morey Rim Tool Co., Blissfield, Michigan, has been organized for the purpose of manufacturing an appliance which is said to remove an automobile tire rim with ease and rapidity. The Morey organization plans to have other devices patented from time to time. E. R. Drake is general sales manager.

The Rubber Trade on the Pacific Coast

While the general condition of the rubber trade on the Pacific Coast is excellent, the recent rise in the price of crude rubber and the uncertainty about the future cost has been giving Far West manufacturers as much concern as it has given those elsewhere. In fact, it has caused a decided revision in the general estimate for 1925 business. At the outset all indications were that in volume and profits this year would break all records; now the forecast is that only in total sales but not in net profits will 1925 excel 1924.

The high cost of crude has caught many small manufacturers in a tight place. Fearing competition of the large concerns, they have in many cases been selling their products on a 30-cent rubber basis, with little or no crude reserve, and the market price over 70 cents. In the past couple of weeks several took a chance on raising prices and others quit entirely, hoping to resume when conditions become more favorable. One concern manufacturing mechanical rubber goods is said to have been placed in a serious predicament through making several large contracts for deliveries based on rubber prices of last February.

In the oil industry there has of late been a marked let-up in demand for rubber goods. It is explained that when a fair amount of the huge quantity of oil and gasoline now in storage is consumed, well-drilling, pumping, and transportation will again cause a lively demand for hose and many mechanicals. The rubber needs of the building trades are, however, increasing; and especially notable are the recent sales of considerable rubber flooring for new structures. Tire manufacturers have made two moderate raises in prices, and another is said to be certain by July 1 if rubber does not drop sharply. Demand continues strong for tires and tubes. Belting for factories and other industrial concerns is being made in increasing quantity on the Coast, some of the larger manufacturers having of late added considerably to their belt-making equipment. While high-class eastern-made brake lining still finds ready sale, the bulk of the lining used on the Coast is now made locally, one concern alone producing 250,000 feet a month. Tire repair material makers find increased demand for their goods as casing prices advance, but complain of the cost of raw materials.

That some shrewd far western buyers foresaw an enhancement in the price of crude rubber, is the explanation offered for the considerable increase in the recent imports, the port of Los Angeles alone showing a rise from 883,728 pounds valued at $287,000 in March, 1925, to 1,455,559 pounds valued at $512,297 in April, 1925. In March, 1924, the rubber imported was but 250,819 pounds and its value $58,656, according to U. S. Treasury Department statistics.

President Charles B. Seger of the United States Rubber Co. has been studying trade conditions by personal observation on the Coast, and has had many conferences during the month with General Manager J. B. Brady in San Francisco and Branch Manager J. B. Magee in Los Angeles. Incidentally Mr. Seger, who is also chairman of the finance committee of the Union Pacific Railway system, conferred with President Carl R. Gray of the railway company concerning the latter's cooperation with Los Angeles in an extensive development of the city's harbor.

The insulated wire trade was well represented at the annual convention of the National Electric Light Association in San Francisco on June 15-19, and reports which were submitted

showed that various hydro-electric and allied projects to be started on the Coast this year would require an unprecedented quantity of rubber insulated conductors. Local manufacturers and representatives of eastern concerns report covered wire in strong demand for many purposes.

The Pioneer Rubber Mills of San Francisco is one of the few concerns which have demurred about raising prices, the explanation given being that as the company had provided for a large reserve when crude prices were low it would pass the advantage on to customers while reserves lasted; but it could not guarantee present prices very long. The company recently completed an extensive addition to its works at Pittsburg, California, and added much to its equipment. It is running strong on large belting, hose and general mechanicals, and operating 16 hours a day.

According to President J. C. Hughes, the Coast Tire & Rubber Co., Oakland, California, is progressing under the new management, the sales since January 1 showing a marked increase. To meet a growing demand among its customers, the company has installed a complete balloon tire making equipment and will have the low-pressure casings on the market about July 1.

The Kelly-Springfield Tire Co., Akron, Ohio, has taken under a long lease possession of a new two-story building just erected on Ninth near Brannan street to be used for its factory branch in San Francisco.

Firestone tire and rubber products will be distributed in Oakland by the Boston Tire & Supply Co., 3329 Broadway.

The Seiberling Tire Co., Akron, Ohio, has opened a San Francisco branch at 925 Brannan street.

The Gould Battery Co. has leased 10,000 square feet in the building at 92 N. Tenth street, Portland, Oregon, and will make "Multnomah" storage batteries there for its northwest trade.

The Columbia Tire Corporation, of which Robert Wurzburg is president, reports much activity at its factory in Portland, Oregon. It states that during the past year its roster of dealers has increased 125 per cent and its distribution grown until it not only extends over the entire Coast but as far east as Chicago and St. Louis. It includes among its casings heavy duty passenger, full balloon, semi-balloon, and heavy duty commercial types.

The Reilly Rubber Co., Los Angeles, California, has completed a new office and warehouse addition to its plant, and added to its equipment for manufacturing inner tubes, of which it turns out 1,600 daily. The company is planning to deal also in tires which will be made for it, bearing the Reilly brand.

F. L. Hockensmith, who since 1911 has been connected with The B. F. Goodrich Rubber Co., Akron, Ohio, has been appointed district manager by that organization, with heaquarters in Los Angeles, California.

The Goodyear Tire & Rubber Company of Los Angeles continues to hold its own among the bigger American concerns in its line. Its daily production of casings averages 5,500 and of inner tubes 6,000. Prices have been advanced twice in thirty days, but demand continues strong. The factory employs 2,450, as compared with 2,200 in 1924, and 1,950 in 1923.

J. H. Stedman, president of Stedman Products Co., South Braintree, Massachusetts, maker of reinforced rubber flooring, recently arrived in Los Angeles, California, via the Panama Canal. Mr. Stedman is well known to the rubber industry, particularly the reclaiming division, through his success with "Monatiquot," "Squantum," and other brands of reclaim, while the latest patent granted to him relates to his process for developing multiple colored flooring. Recently completing his quarter of a century in the rubber business, Mr. Stedman is included among the first of the rubber reclaimers.

The Seibel Air Spring Co., Inc., 813 South Commercial street, Inglewood, California, has purchased four acres of land at Inglewood and has prepared plans for the construction of a factory building where a special type of rubber air spring will be produced. While the company's specialty has heretofore been used mainly on buses and tractors, orders are now calling for its installation on railway coaches and steamships. H. Seibel heads the organization.

C. P. Allen, who since the organization in 1921 of The Seiberling Rubber Co., Akron, Ohio, has been in charge of the company's Dallas branch, has been appointed manager of the division at Denver, Colorado. Previous to his connection with the Seiberling organization, Mr. Allen had served the Goodyear company as office manager at Houston and Dallas, Texas.

The E. M. Smith Co., Los Angeles, California, is operating on a 16-hour schedule daily in trying to overtake orders for rubber belting, heavy hose, radiator hose, brake lining, and general mechanicals. The company, of which E. M. Smith is president, recently installed more folding machinery for heavy belting, and other additional equipment.

Only toy balloons filled with inflammable gas, it appears, are under the ban in Los Angeles. A complaint was made recently that a large captive passenger balloon making daily ascents with passengers was a potential danger in the heart of the city and that its owners should be prosecuted under Ordinance 46,365. The city's law department regretted that relief could not be afforded as the only gas bags specifically prohibited were plainly those of the "toy" variety.

The Hendrie Rubber Tire Co., Torrance, California, of which Thomas H. Throop is president and general manager, and William Baker treasurer and resident manager, has closed down temporarily on account of the high cost of raw materials. The company had been averaging 150 casings and 300 tubes daily, and according to Mr. Baker, had a large number of orders in hand.

The Angelus Heel & Rubber Co., Los Angeles, California, has decided to suspend production until trade conditions improve. The high cost of crude rubber and sharp competition have been unfavorable factors, Manager McCarty states.

George Cowden has been made manager of the Los Angeles, California, branch of the Mohawk Rubber Co., Akron, Ohio. He left the company three years ago to sell tires independently.

Akron Shriners Visit Los Angeles

The Rubber City was well represented at the recent annual conclave of Nobles of the Mystic Shrine in Los Angeles, California. Tadmor Temple of Akron, Ohio, sent a delegation of 408, the rubber industries being conspicuously represented, the leader of the delegation being Robert E. Lee, of the Firestone organization, who is potentate of the temple. Others were executives of the General, Miller, India, Mohawk, Goodyear, Seiberling, and Swinehart companies. Two special trains conveyed the Akron Shriners, and the parade of the Tadmor Arab Patrol was one of the notable features of the big meet and celebration.

The delegation of the "baby temple," as it is termed, was exceeded in size only by that of Medinah, Chicago, Illinois. The visitors brought with them rosettes and many other novelties of rubber, which were soon snapped up as souvenirs; and they in turn bought up nearly all the rubber bathing caps in the city to cover their fezzes, as rain marred a considerable part of their stay. The tire men banqueted Los Angeles Shriners at the Ambassador Hotel.

Los Angeles Meeting A. C. S.

The seventieth meeting of the American Chemical Society will be held in Los Angeles, California, August 3 to 8, inclusive, 1925. The special train is already nearly filled and it would appear that a second section of the train may be necessary. The party will leave Chicago at 11:00 p. m., July 28, taking on an additional car at Kansas City. A special car is being run from New York City, leaving the Pennsylvania Station over the Lehigh Valley at 11:50 a. m., July 27.

The Rubber Trade in Canada

Canadian manufacturers decided early in June to increase tire and tube prices five to ten per cent, resulting from the high price of rubber. Since the last increase in tire prices the cost of rubber has advanced from 20 to 94 cents a pound. It is stated that manufacturing costs warrant still higher prices but that domestic competition is so keen that advances are held to very narrow margins. However, increasing costs of rubber will make it necessary for manufacturers to raise prices further on tires and other rubber goods.

Local distributers of garden hose are doing considerable business in this line at present. Bookings last Fall were not heavy and retailers had considerable stock left over. Due to the intense heat wave, these stocks have been depleted and now repeat orders are being received. Bathing caps have been selling well, the decided warm spell creating a considerable demand for these goods. The call of the open has been felt likewise, and retailers' stocks of crêpe sole athletic footwear are being rapidly reduced.

Reorganization of the finances of Oak Tire & Rubber Co., Ltd., Toronto, Canada, with the idea of providing additional working capital, is now in progress. The company has many orders on hand, its product having won an excellent position in the tire market, but owing to lack of working capital, but one shift has been operating and the company is behind on deliveries.

The Gutta Percha & Rubber, Ltd., Toronto, Canada, made an attractive display of fire extinguishers and hose during the recent fire prevention week held in Toronto. A whole window was devoted to a number of chemical fire extinguishers with several piles of fire hose; in the centre being a large window card emphasizing the tremendous loss Canada sustains each year from forest fires.

Due to the increasing demand for Pennsylvania vacuum tires and ton tested tubes the Pennsylvania Rubber Company of America, Inc., Jeannette, Pennsylvania, has made new connections and appointed the Provincial Rubber Sales Co., 309 St. James street, Montreal, Canada, exclusive distributers for the Province of Quebec.

The Aero-Cushion Inner Tire Co., Quebec, Canada, has been purchased by S. J. Downing. The company's office and warehouse is located at 4 St. Denis street, Montreal. Sales representatives have been appointed for Quebec and Eastern Provinces.

C. N. Candee, president of Gutta Percha & Rubber, Ltd., Toronto, Canada, has been elected honorary president of the newly formed Toronto Angling Club.

The Ames Holden McCready Rubber Co., Ltd., has removed the Toronto office to 19 Yonge street. W. E. Snelling is the Toronto manager and the salesmen covering the Province of Ontario are W. F. Smith and W. H. Stagg.

W. E. McCormish, assistant general manager of the Gregory Tire & Rubber Co., Vancouver, B. C., has just returned after a business trip through the Prairie Provinces.

The Canadian I. T. S. Rubber Co., Ltd., West Toronto, Canada, manufacturer of rubber heels, stair treads, bands, fly swatters, erasers, rubber elastic, flooring, has moved the Montreal office to 8 Chenneville street.

Las-Stik Patch Manufacturing Co., Hamilton, Ohio, will manufacture its product in Canada. The Las-Stik tube patch is distributed in Canada by J. St. Mars, Ltd., Winnipeg, Manitoba, and Toronto, Ontario, Canada.

The Canadian I. T. S. Rubber Co., Toronto, Canada, recently suffered a heavy loss by fire, but fortunately stocks of finished goods escaped the flames. Plans have already been made for the reconstruction of the building.

Andrew Koehler, manager for The B. F. Goodrich Rubber Co., Akron, Ohio, was a recent visitor to Victoria, B. C., on a tour of inspection of general branches in Canada. A. F. Gavin is the company's local representative.

The U. S. Light & Heat, Ltd., Niagara Falls, Ontario, Canada, manufacturer of automobile and radio batteries, will increase its output of rubber case batteries, as the demand for this type has greatly exceeded that of the wood case battery.

T. B. Tompkinson, for several years assistant comptroller of The B. F. Goodrich Co., has gone to Kitchener, Ontario, Canada, as vice-president of the Canadian-Goodrich Co., Ltd.

The Paramount International Rubber Co. of Canada, Ltd., Farnham, Quebec, Canada, has taken over the plant of the Farnham Rubber Co., also at Farnham, as well as the factory of the Canada Star Rubber Co., of Toronto. The equipment of the latter plant will be removed to Farnham, where the Canada star tube will be manufactured by the Paramount company's vacuum process, and where the production of rubber footwear will be continued, and also a regular line of hollow rubber articles. Fred T. Roberts is president of the Paramount organization.

Plans for a $50,000,000 merger of eight asbestos companies of Canada which control 85 per cent of the world's output are being consummated. The leading companies are the Asbestos Corporation of Canada, which produces about one-third of the Canadian output; the Maple Leaf Co.; and the Black Lake Asbestos & Chrome Co. Canada dominates the world's asbestos market and enjoys a monopoly of the short fiber product which is in greatest demand today.

Report of Rims Inspected and Approved by The Tire & Rim Association

Size	May, 1925		First 5 Months 1925	
Clincher Rims	Number	Per Cent	Number	Per Cent
24 x 3	1,706	0.1	6,779	0.1
26 x 3	7,667	0.3	48,314	0.6
28 x 3	132	0.0	739	0.0
30 x 3	66,754	2.2	177,639	0.8
30 x 3½	423,155	16.7	2,330,953	21.0
31 x 4	69,482	2.7	425,240	0.5
Straightside Rims (Fass.)				
27 x 3½	194	0.0	1,512	0.0
28 x 3½*	943,459	37.2	3,382,278	30.0
29 x 3½*	1,277	0.0	143,247	1.5
30 x 3½	54,784	2.1	373,251	4.0
32 x 3½	562	0.0	6,011	0.1
28 x 4*	270,715	10.7	1,254,281	11.1
29 x 4*	160,934	6.8	581,839	5.5
30 x 4*	39,710	1.6	269,689	2.5
31 x 4	.....	...	1,393	0.0
32 x 4	32,702	1.3	124,154	1.0
33 x 4	2,307	0.1	5,513	0.0
34 x 4	.....	...	300	0.0
29 x 4½*	43,100	1.7	241,164	2.5
30 x 4½*	113,074	4.5	525,960	4.6
31 x 4½*	41,318	1.6	211,714	2.0
32 x 4½	64,873	2.6	308,469	3.0
34 x 4½	10,671	0.4	63,119	0.6
30 x 5*	43,321	1.7	162,869	1.5
31 x 5*	32,388	1.3	210,883	1.8
33 x 6*	2,886	0.1	10,507	0.2
Truck Rims				
30 x 5	76,258	3.0	355,320	3.5
34 x 5	10,553	0.4	58,365	0.5
32 x 6	10,850	0.4	69,991	0.6
36 x 6	8,406	0.3	28,903	0.3
34 x 7	1,838	0.1	11,056	0.0
38 x 7	1,920	0.1	5,576	0.0
36 x 8	310	0.0	6,099	0.1
40 x 8	915	0.0	5,667	0.0
40 x 10	158	0.0	354	0.0
44 x 10	.....	...	205	0.0
Total	2,538,388	100.0	11,409,347	100.0

*Balloon casings.

NOTE.—In May 67.2 per cent of all rims produced were for balloon tires. Of the remaining 32.8 per cent, 21.6 per cent were clinchers, 4 per cent were motorcycle rims, and 4.3 per cent were truck rims. There were 22-27 x 4½ S. S. rims produced experimentally during May.

UNITED STATES EXPORTS OF PNEUMATIC CASINGS FOR AUTOMOBILES are estimated for the first quarter of the present year at the following figures: January, 112,017 tires, value $1,330,847; February, 105,209, value $1,218,811; the figures rising in March to 151,352 casings, value $1,777,093.

The Rubber Trade in Europe

Great Britain

THE present high price of rubber is being deplored not only by the manufacturer and various importing interests, but by the thoughtful producer as well. While the latter naturally wishes to secure as high a figure as he can for his commodity, he views the present situation with considerable concern. Far from being an unmixed blessing, "the unwholesome 'rocketing' of the spot prices for rubber in the London market" is having at the present time a most disturbing effect upon the industry, and the end is not yet.

British Views Regarding Rubber Situation

The situation in general has called forth some interesting expressions of opinion, and certain leading producers are making valuable comments on such phases of the question as: the present price of rubber; the increase in world consumption; the limit of productivity of estates; and the need for new planting. Sir Stanley Bois, chairman of the Seremban Rubber Estates, says:

"Since the beginning of this month (May), as the result of further heavy deliveries, we have seen a rise to what may almost be termed a panic price, and we cannot look upon the present conditions as in any sense normal. That there will be any real shortage of rubber up to the end of the year I am loath to believe, and I trust that heavier shipments from the East may shortly materialize, and have the effect of reducing the present quotations to a more reasonable figure, as, taking the long view from the producing side, I cannot think it is to the ultimate good of the industry that so sudden and abnormal an advance should have taken place, or, having taken place, that it should last sufficiently long to undermine the confidence that we have with good reason felt, up-to-date, that the working of the export restriction scheme would bring forth rubber in sufficient quantity to satisfy all requirements and at a reasonable price per pound.

"I cannot look upon the position at the moment as anything but abnormal, and am still strongly of the opinion that our best interests will be served if only we can stabilize the price of rubber, and limit the range of fluctuations within much narrower limits about a point, say, between 1*s.* 6*d.* and 2*s.* per pound."

P. J. Burgess, chairman and managing director of the Malaysia Rubber Co., Ltd., expresses the following opinion, saying in part: "For the past two years the free stocks of raw rubber have been heavily drawn upon, and the shrinkage of the stock in London down to the present figure of 7,567 tons, which is less than one week's world consumption, has brought home to consumers the fact that higher prices for rubber must be paid to obtain a sufficiency of it. The delay in facing that position and acting upon it, during this year and in previous years, accounts entirely for the present stringency in supply and for what I regard as the unwholesome 'rocketing' of the spot prices for rubber in the London market at the present time.

"The future position is not too clear, but I think . . . there are three fundamental factors we ought to keep in front of us, and on which we ought to have precise knowledge. The first of these is the probable consumption and demand in 1925 and 1926 (I am taking the two years only); the next one is the probable releases of supply which will come during those two years under the Restriction Act; and the third factor is the limit of production of which estates at present being restricted will be capable under free output."

Claiming that the world's consumption of rubber during the past three years has shown an average increase of over 13 per cent per annum, Mr. Burgess believes that the year 1926 will demand a supply of about 590,000 tons, while production in 1925 will approximate 485,000 tons, and 580,000 tons in 1926. "It would seem," said Mr. Burgess, "that it is just probable that production will nearly catch up with consumption in 1926, but there is no accumulation of stock apparently possible. Further, there are not sufficient young areas of immature rubber existing to provide for the yearly increase in demand which will take place from 1926 onwards, and, so far as I can see, we are now entering upon a period of years when the supply of rubber, limited by the known factors of acreage planted and productivity, will be short of the demand as indicated by the world's increasing activity in every rubber-consuming direction."

According to H. de C. Hamilton, chairman of the Kali (Java) Rubber Plantations: "I consider the price of the raw material should average from 1*s.* 6*d.* to 2*s.* for some time to come. The sharp advance at the present moment has been brought about by exceptional circumstances that might have been avoided, and we do not want to see the price rise to a point where it would check consumption and put a damper on new outlets, of which there are many in the making. . . . . The output of rubber cannot be increased by leaps and bounds at short notice, so prices may rule high and even go higher during the next six months or so, but this is likely to be only a passing phase, and we can look for steadier prices about nine months hence. . . . .

"To my mind—to keep up the future rubber requirements of the world—considerable areas should be planted up yearly from now on to make good the wastage going on in the old rubber —otherwise there will be trouble, but it may be difficult to find land and labor available for the purpose at short notice."

Is Standard Production Possible?

The question of the capacity of plantations as a whole to supply 100 per cent of "standard production" is discussed in a circular being issued by the firm of Charles Hope & Son, this publication stating in part:

"Notwithstanding the fact that some producers have continually complained, and still do complain, that estates under their control have been given a standard production that is much too low, they now, together with nearly all branches of the industry, seem to have satisfied themselves that estates in the restricted area cannot furnish their full standard production, and that the maximum they would be capable of producing is only about 85 per cent of the standard allotted to them.

"The majority of people do not give any explanation as to why this should be so, while the planters themselves give various reasons to substantiate their contentions, the principal ones being: lack of available labor; lower yield from early planted areas; and more conservative tapping needed on account of poor bark renewal. These are all very plausible arguments and apparently convincing to those who wish to be convinced. . . . . To maintain that the average estate can furnish only 85 per cent of its standard production is tantamount to asserting that the average output per acre today could not be as much as it was five years ago; on the contrary, it should be more, as since 1920 better planted and more healthy areas have come into bearing, while old areas have had every opportunity of recuperating. . . . .

"The percentage of increased output from 1917 to 1920, the year before the slump in prices took place, and the last year that prices averaged about the present level, was 46 per cent. We therefore see no reason why the restricted areas should not be

able to supply the full standard production, the present output from the unrestricted area be fully maintained, and consequently the present shortage be relieved before the end of the year."

Another point of view is that of *The India-Rubber Journal* in an editorial entitled "Rubber Production Prospects": "There are many, and we ourselves are among them, who believe that 100 per cent standard production, viz., an average output of 400 pounds an acre, is an impossibility unless at the expense of the future well-being of the trees, and we see no likelihood of the present planted acreage producing at maturity anything like this amount. The planted area of existing rubber plantations has recently been given as 4,170,000 acres, and an output of 340 pounds per acre (a possible maximum which would give 632,000 tons per annum) is perhaps nearer the truth."

British Rubber Factories to Be Sold

The plant owned by The Beldam Tyre Co., Limited, Brentford, Middlesex, England, will be sold at auction at 155 Queen Victoria street, London, E.C.4, on July 15, 1925, by Leopold Farmer & Sons, auctioneers, 46 Gresham street, London, E.C.2, England. The works which cover about 3½ acres are equipped with modern rubber machinery for the production of tires, tubes, and other rubber goods, and have a floor area of about 90,000 square feet.

On the same day and at the same place Leopold Farmer & Sons will also sell by auction the plant of the former Standard Tyre & Rubber Manufacturers, Limited, at Alperton, near Wembley, Middlesex. This factory is also well equipped for the manufacture of tires, inner tubes, and rubber goods, having a floor area of about 70,000 square feet, while the entire property comprises 14 acres.

British Notes

Advances in tire prices made by the Dunlop and Michelin organizations were followed by similar British companies, the advances varying from a little over 10 per cent to somewhat under this figure. Prices of inner tubes were increased 16 per cent.

Colin Macbeth has, as a consulting engineer, opened offices at 67 Norwich Union Chambers, Birmingham. Becoming connected in 1913 with the Dunlop organization as works manager, Mr. Macbeth was previously for a considerable period with Wood Milne, Limited, as sales manager. During his long association with the Dunlop company, Mr. Macbeth took out about 100 patents, while since 1921 he has made some important contributions to the technical press.

J. Snow Huddleston has been elected chairman of the Cable Makers' Association, succeeding Sir Thomas Callender. In 1889 Mr. Huddleston became connected with Siemens Bros. & Co., Limited., while in 1918 he became general manager of the Union Cable Works, at Dagenham.

R. E. Robinson, the new chairman of the Ebonite Manufacturers' Association, has had a wide experience both in England and on the Continent, his connection with the ebonite industry dating from 1913 when the Peel-Conner Telephone Co., with which organization Mr. Robinson became associated in 1908, decided to equip a factory for the manufacture of ebonite.

Germany

Statistics for Germany's foreign trade in rubber goods during the first quarter of 1925 show an increase in values as compared with figures for the corresponding period of 1924. Thus the total exports for the three months ended March, 1925, were 39,201 quintals, value 21,300,000 marks against 41,179 quintals, value 16,668,000 marks in 1924. Of these amounts, 36,092 quintals, value 18,197,000 marks, related to soft rubber goods and 3,109 quintals, value 3,103,000 marks, to hard rubber goods in 1925, while in 1924, soft rubber exports came to 39,137 quintals, value 14,864,000 marks, and hard rubber to 2,042 quintals, value 1,804,000 marks.

At the same time, total imports rose from 1,288 quintals, value 529,000 marks, to 5,096 quintals, value 3,382,000 marks, the quantity of soft rubber goods in 1924 having been 1,272 quintals, value 520,000 marks, against 4,958 quintals, value 3,278,000 marks in 1925.

The foregoing shows that there is a continued falling off in the exports and increase in the imports of rubber manufactures. Although from a comparison of the figures for March, 1925, with those for the quarter ending March, 1925, it would appear that German exports are tending to gain while imports are taking a slightly downward course.

Higher Prices for Technical Goods

In view of the fact that bargaining and underselling has been the order of the day for some time past, the announcement circulated by manufacturers of technical rubber goods, that prevailing prices for their goods would be raised from 20 to 40 per cent, has come as a shock to dealers and consumers. In the eyes of the latter, the action of the manufacturers is unwise since business in the consuming industries is not particularly bright and the results predicted, in some quarters, are that buyers will hold off; that imports will increase still further and that the qualities of local products will get worse.

Manufacturers, on their part, justify their measure by citing the unexpectedly rapid rise in rubber prices and the high cost of production. The balata belting industry is experiencing a period of stagnation and manufacturers have decided to reorganize in order to bring about some improvement. Several well-known firms have united in a convention of German balata belting factories and new terms have been fixed which put prices up about 15 per cent.

Norway

The Askim Gummivarefabrik at Askim, Norway, which at present produces 3,000 to 3,500 pairs of rubber shoes daily, is enlarging its plant so as to raise the daily output to 5,000 pairs. This will include rubber-soled canvas shoes, the manufacture of which will be taken up by the concern.

It appears that the foreign demand for Norwegian rubber shoes has been rising steadily. This footwear retails at 8.25 kroner per pair, whereas the Swedish article sells for 8.50 kroner per pair, in Norway.

Austria

Details of Austria's rubber trade for 1924 have now come to hand. The chief exports include: footwear and accessories, which showed a marked increase both in quantity and value, the figures being 13,359 quintals, (220 pounds) value 6,279,000 gold kronen in 1923 and 19,033 quintals, value 11,610,000 gold kronen in 1924; toys, which rose from 5,584 to 7,488 quintals; elastic fabrics and fabrics combined with rubber, shipments of which doubled during 1924 when they totaled 2,620 quintals, value 2,493,000 gold kronen instead of 1,370 quintals, value 1,348,000 gold kronen; apparel and other articles made of the above fabrics, showing a similar increase from 2,733 quintals, value 2,370,000 gold kronen to 4,774 quintals, value 4,687,000 gold kronen.

Among the exports which declined should be mentioned belting, hose and packing—10,365 quintals in 1924 instead of 11,007 quintals; pneumatic tires and tubes—1,294 quintals against 1,685 quintals; solid tires—1,044 quintals instead of 1,559 quintals.

Among the imports, increases were noted in: footwear and accessories—1,097 quintals and 445 quintals in 1924 and 1923 respectively; elastic fabrics and fabrics combined with rubber—2,124 quintals instead of 1,587 quintals; belting, hose and packing—686 quintals against 612 quintals.

On the other hands, imports of tires (solid and pneumatic tires and tubes) declined somewhat and totaled 6,642 quintals in 1924, as compared with 7,191 in 1923.

The Rubber Trade in the Far East

Malaya

THE statistical position of rubber and the sharp upward trend of prices are causing much elation among shareholders and producers. But of course there are the usual number of those that do not consider a boom an unmixed blessing and those that predict the much-discussed shortage of rubber will not take place because demand for rubber for tires will not continue to expand at the rate witnessed up to now. On the other hand increasing supplies are to be looked for from native and other sources outside the restriction area. The last view, of course, is classed with scare talk of the anti-restriction variety and under present roseate conditions gets little or no hearing. Boom talk, although interspersed with warning, is more grateful to the ears of people just emerging from a long drawn-out slump period.

Long Contract Rubber Selling System

The *Straits Times* is optimistic enough to believe in a shortage, but at the same time it is alive to the disadvantages of a boom period: the new uses for rubber for which so much propaganda has been made would have to be abandoned owing to excessive prices; reclaimed rubber would come into its own again; the synthetic bogey would be resurrected and the lessons in economy taught by the slump would go by the board.

But the time favors the employment of a system calculated to have a stabilizing effect while it assures a fair price to the producer, encourages the much needed expansion of rubber areas and protects consumers against violent price fluctuations. This is a long contract system of selling, by which producers and consumers legally bind themselves to sell and buy according to the terms of the contract over a period of not less than ten years.

The prevailing system of forward selling puts the producer at the mercy of the consumer during uncertain or depressed periods as the latter can manipulate a nervous market by selling his own rubber at less than its cost and buying more rubber again at a lower price caused by this action.

The long contract system has the advantage over a central selling scheme in that there is no need for the cooperation of the majority of rubber producers. It could be started by a group of half a dozen large estates or fewer. Such a group would form a sales committee through which the individual companies agree to sell their entire output. This committee would fix terms of sale somewhat as follows: quantity tenders on firm contract for a period of not less than ten years; terms to be minimum 1*s* 6*d* and maximum 3*s* per pound over the whole period; rates 5 per cent below current open market rates as long as price is not put below 1*s* 6*d* or above 3*s*.

The committee would sell in the open market any rubber not needed for long contract commitments. The original group could expand indefinitely. More favorable terms could be offered to consumers who place their contract promptly.

Bud Grafting

Experimental work in bud-grafting has been so limited in Malaya as compared with similar work in the Dutch Colonies, that reports of local efforts in this direction are of special interest.

We learn that 1,172 budded stumps, from mother trees selected on Pataling Estate, were planted in a prepared area on Pilinoor Estate toward the end of last year.

Budded stocks from a single mother tree were planted in rows together. Previous to planting this area a complete plan was prepared, the holes to receive the plants being numbered in series of 100. A detailed record of each clone was kept and the position of each plant indicated in the plan at the time of planting. Some 300 budded plants ready are still kept in the nursery to be used as occasion requires.

In another field experiment on Pilinoor Estate 600 trees have been included. These have been numbered in series of 100. All of these budded trees have been marked out for tapping with a V-cut in which each arm is 9 inches, giving an average cut of about one-half the girth. Tapping will take place on alternate days and dry rubber samples will be taken at least once a month from each tree for the period of one year.

Rubber Statistics

Official statistics for April and for the first four months of 1925 show that the total exports of rubber from all the parts of British Malaya were 22,413.85 tons for the month against 20,551.07 for the same month the year before. For the period January-April 1925 total exports came to 90,055.53 tons as compared with 86,109.46 tons for the corresponding period of 1924. The net increase for the current year to date is 3,946.07 tons.

Imports of foreign rubber during April, 1925, amounted to 11,750.47 tons and comprised 1,608.80 tons dry smoked sheet, 437.55 dry crêpe, 8,389.43 tons wet unsmoked sheet, 681.32 tons wet scrap and 633.37 wet lump, or 2,046.35 tons of dry rubber and 9,704.12 tons of wet rubber.

In April, 1924, foreign imports came to 7,909.17 tons. The total imports of rubber for the period January-April, 1925, came to 45,351.70 tons, while for the same period of the previous year these were 32,485.43 tons, an increase of 12,866.27 tons for the current year to date.

Ceylon

Export of rubber from Ceylon during March, 1925, comprised 4,362 tons of Ceylon-grown rubber and 434 tons of imported rubber. For the same month of 1924 the figures were: Ceylon rubber 3,257 tons; imported rubber 270 tons. Shipments of rubber latex in March, 1925, amounted to only 8 gallons, 24 pounds.

It will be remembered that there was a sudden and very considerable increase in November and December, 1924, when latex exports were 11,253 and 47,960 gallons respectively. In January, 1925, the Ceylon Government began to restrict latex which became liable to pay a duty of 2½ cents per pound in addition to ¼ cent rubber restriction fee. At the time protests went up in certain quarters against this measure which it was claimed would have an unfavorable effect on latex shipments. It now looks very much as though this prediction had been verified, that is, if there is no other explanation for the very sudden drop in the exports of latex.

Netherlands East Indies

At a meeting of the Besoeki (Java) Planters' Association, Dr. W. H. Arisz gave an interesting lecture on Hevea seed as planting material.

It is well known that Dutch authorities advocate the planting of bud grafts side by side with seedlings in new areas. However, the bud grafts must come from approved clones on stock from selected seed while the seedlings too should be derived from selected seed.

For the stock of budded trees, rapidly growing robust seedlings from healthy mother trees with a satisfactory yield are necessary. The problem is to get suitable seed for stock and for other seedlings. Hevea trees produce seeds by cross fertilization which makes for great differences in the quality of the seed from one mother tree, so that seedlings from a high yielding mother tree frequently give disappointing crops. Nevertheless as it is known that good yielders give fewer seeds than bad ones, indiscriminately gathered seeds must be expected to give rise to a

very much higher percentage of bad milkers than selected seeds.

The Besoeki experiment station has a garden of about two hectares in which are trees obtained from seed of approved trees on different estates. This seed was planted in 1915, a time when not much was known of seed selection and when the method of checking yields was far from perfect. However, tapping results obtained in 1923 are instructive in that they show that here too the descendants of good trees were not always good yielders themselves. There was a considerable degree of variability due both to internal qualities and external conditions (close planting for instance).

Better results were obtained by Hamaker, a firm believer in seed selection. His trees planted from seed in 1917 and 1918 gave total yields of 237 kilos per bouw (1.74 acres) in their seventh year and 373 kilos in their eighth year.

Increasing attention is being paid in Java and especially in Sumatra to obtaining pure strain seed from selected bud grafts. Several estates now offer such seed.

Attempts have been made in Java and Sumatra in the direction of artificial pollination of trees with the view of getting seeds from good yielders. In Besoeki these experiments were not very successful and from only one tree on the Pagoendangan estate was it possible to get seed by this means. This seed has been distributed among various plantations and in the course of a few years it is hoped to be able to publish results.

In Besoeki a well-known company has followed the example of a Sumatra enterprise and has laid out fifteen small isolated gardens of bud grafts from which it is hoped to get pure strain seed in a few years' time. These bud grafts are all from one mother tree. Besides these there are 15 isolated plantations the bud grafts of which are derived from six mother trees. Finally, there is on the same estate a seed garden in which the bud grafts from 23 different mother trees have been brought together.

Much more has been done in this connection in Sumatra where some of the isolated gardens have an area of one hectare (2.47 acres).

Dr. Arisz stresses the desirability of Java companies doing more of this kind of work, however, under the direction of the experiment stations so that strict rules regarding the removal of inferior clones may be enforced, as is the case in Sumatra.

Bud Grafts for Planting

A lecture by Dr. J. Schweizer concerned what has been done in the Dutch colonies with bud grafting and the conclusion arrived at from results.

It has been found that external conditions greatly affect the yield of Hevea trees and in several instances clones from exceptionally high yielding mother trees have had to be cut out because of their low rate of productivity. On this account it is advisable not to keep the number of mother trees too small. The ideal mother tree for bud wood would be a tree whose offspring consistently gave high yields under widely varying conditions of soil and climate.

The influence of stock on the budded tree is gaining increased attention and it is believed that the variability noted in the descendants of one mother tree may to a certain as yet unknown extent be due to the stock.

While the uniformity of the appearance of budded trees of the same clone as compared with that of seedlings from one mother tree is a fact that has always been pointed out by authorities, it appears that in larger plantations particularly, there are much greater differences than have been supposed.

Thus there is no question of all trees in a clone reaching maturity about the same time.

Two peculiarities of budded trees are the odd thickening of the stem where scion and stock unite, which is known as "elephant's foot," and the fact observed in Sumatra that while mother trees were self-sterile, their negative descendants were self-fertile.

As to the yields of clones, these often fluctuate considerably, and the question presents itself whether these fluctuations are repetitions of the difference in yielding capacity of a mother tree at different times. It has also been found that output of clones over a prolonged period is apt to vary considerably. The experience in West Java has been that a clone giving satisfactory crops in the first tapping year, gave 60 per cent less the second year.

Moderate and inferior yielders improved comparatively rapidly and gave 20 to 60 per cent more rubber in the second than in the first year. Occasionally a clone which showed moderate productivity in the first tapping year, suddenly developed into the best producer in the following year. On the other hand the best clones of the first year remained good but their yields showed practically no increase.

Some clones gave decidedly poor yields when planted on a large scale and had to be taken out; compared with seedlings of the same age, these clones showed crops five times lower. However, another large plantation of different clones was compared with one of seedlings of the same age, and productivity was found to be somewhat higher for the budded trees, which shows that the yields from individual clones were considerably higher than the average for seedlings.

In connection with the above it is pointed out that the value of a clone cannot be determined until it has been tested for a sufficient length of time.

Many plantations in Java have areas of 50 to 200 bouws under budded trees, although it must be said that in most cases these plantations have been laid out with a view to obtaining superior seed and not so much to have areas of bud grafts for rubber exploitation.

The results obtained from the work with bud grafts do not yet lead to a definite answer as to the value of this method of propagation. There are still a number of questions to be answered so that the method is to be considered as being still in an experimental stage.

Gutta Percha Planting

It is learned that the government's plan to take over and exploit the gutta percha estate at Bila has been abandoned. On the other hand it has been definitely decided to start such an enterprise in Simeloengoen. For this purpose a territory covering 3,000 hectares has been chosen in the neighborhood of Pardargangan. A large quantity of planting material bought in Bila is ready for transportation to the new plantation which is to be run like the other government estates, as a private enterprise.

Rubber Prize Competition

The propaganda department of the International Association for rubber and other crops in the Netherlands Indies offers a prize of 2,000 guilders (about $800) for a means of preventing slipping on wet, muddy pavements, etc., when using crêpe rubber soles; at the same time the advantages of these soles must be retained.

A further 500 guilders is at the disposal of the judges to be awarded to those whose suggestions contain worthwhile elements.

All answers should be submitted before March 15, 1926, to the above association from which further particulars may be obtained.

New Rubber Company in Java

A group of rubber planters recently bought from C. Dieckhaus, Bandoeng, an unexploited area of land at Genteng, covering 900 bouws. This land is situated close to the coast.

The Government has made the condition that cultivation should be started as soon as possible, consequently the land will shortly be opened up and planted to rubber and rozelle fiber.

DURING THE PAST YEAR THE UNITED STATES EXPORTED 3,917,574 pairs of canvas rubber-soled shoes, value $2,962,069. The corresponding figures for 1922 were 2,977,627 pairs, value $2,358,463.

Rubber Patents, Trade Marks and Designs

The United States

May 12, 1925*

1,537,112 Air cushion of soft and reinforced rubber. E. J. Glackin, Chicago, Illinois.
1,537,425 Rubber dauber. F. Farwell, Cincinnati, Ohio.
1,537,456 Bitumen rubber and silk fabric. J. Brown, Auckland, New Zealand.
1,537,761 Removable cap for rubber heels. J. Geisman, New York, N. Y.
1,537,778 Rubber overshoe of relatively thin sheet elastic. B. R. Nyhagen, New York, N. Y.
1,537,879 Pneumatic-treaded vehicle wheel. A. L. Putnam, assignor to Detroit Pressed Steel Co., both of Detroit, Michigan.

May 19, 1925*

1,537,988 Inflatable game ball. C. E. Dillinger, Santa Maria, California.
1,538,031 Storage-battery container with hard rubber end walls. C. J. Dunzweiler, assignor to Willard Storage Battery Co., both of Cleveland, Ohio.
1,538,036 Cushion-heel blank. J. B. Hadaway, Swampscott, Massachusetts, assignor to United Shoe Machinery Corporation, Paterson, New Jersey.
1,538,147 Elastic covering for automobile steering wheels. H. G. Trench, and W. C. Osborn, Hartford, Connecticut.
1,538,163 Inflatable ball. F. A. Buechner, Battle Creek, Michigan.
1,538,181 Corset shield. N. Fahey, St. Paul, Minnesota.
1,538,202 Arched flap for pneumatic tires. W. J. P. Moore, New York, N. Y.
1,538,303 Transmission belt. C. R. Short, assignor to General Motors Research Corporation and The Dayton Rubber Manufacturing Co., all of Dayton, Ohio.
1,538,430 Bead core. J. R. Gammeter, Akron, Ohio, assignor to The American Chain Co., Bridgeport, Connecticut.
1,538,627 Inflatable swimming device. B. Di Lauro, Akron, Ohio.
1,538,704 Bouncing toy. A. R. Kay, Davenport, Iowa.
1,538,720 Combined bat and ball with elastic cord. W. H. Mercer, Portland, Oregon.
1,538,740 Bath-sponge device with rubber layer on upper portion. C. Petersen, New York, N. Y.
1,538,789 Molded rubber float and method of making it. C. F. Flemming, Akron, Ohio.
1,538,818 Hard rubber battery box. J. F. Johnston and G. W. Bulley, assignors to The Miller Rubber Co., all of Akron, Ohio.
1,538,826 Elastic webbing. M. Kops, Riverdale, assignor to Kops Bros., New York, both in New York.

May 26, 1925*

1,538,990 Rubber recoil pad for gun stocks. F. D. Hawkins, Sioux Falls, South Dakota.
1,538,997 Combined filling and testing device for inflating pneumatic tires. J. E. Maples, Fort Worth, Texas.
1,539,030 Pressure-indicating valve stem for tire tubes. E. J. Sweetland, Montclair, New Jersey.
1,539,140 Sponge rubber filler for egg-shipping cases. W. S. Palmer, Glenburn, Pennsylvania.
1,539,199 Pneumatic insole. M. J. Merrihew, Avalon, California.
1,539,283 Resilient lift for heels. R. C. G. Staats-Oels, Brooklyn, New York.
1,539,320 Resilient heel. E. I. La Chapelle, Brockton, Massachusetts.
1,539,325 Blow-out patch for pneumatic tires. A. Omand, assignor to R. C. Lambert, both of Toronto, Ontario, Canada.
1,539,332 Boot of rubberized material. P. Y. Smiley, Kitchener, Ontario, Canada.
1,539,558 Athletic helmet employing rubber ring. H. Goldsmith, assignor to The P. Goldsmith Sons Co., both of Cincinnati, Ohio.
1,539,578 Brassiere with elastic insets. W. Kops, assignor to Nemo Circlet Co., Inc., both of New York, N. Y.
1,539,663 Blow-out patch. M. D. Glassbrooke, Fresno, California.
1,539,721 Demountable wheel tread. R. J. Davis, Barnes, Wisconsin.
1,539,809 Rubber heel. L. De Lucia, Washington, District of Columbia.

June 2, 1925*

1,539,865 Attachment for tire valves. W. H. Pratt, Kingston, New York.
1,539,900 Automatic tire pump. H. F. Harvey, Prosper, Minnesota.
1,540,155 Detachable metal handle for battery boxes. H. H. Wydom and J. E. Perrault, assignors to Hood Rubber Co., all of Watertown, Massachusetts.
1,540,416 Fountain pen with flexible ink reservoir. R. Namiki, Tokyo, Japan.
1,540,470 Mud hook with tire carried by wheel. J. F. Hayden, Galion, Ohio.
1,540,480 Elastic webbing. W. Kops, assignor to Kops Bros., Inc., both of New York, N. Y.
1,540,512 Tire valve attachment. J. F. Carroll, assignor to C. O-2 Products Co., both of Philadelphia, Pennsylvania.
1,540,554 Acid-proof container with rubber lining. R. T. Griffiths, assignor to The Miller Rubber Co., both of Akron, Ohio.
1,540,584 Car door with guideway comprising an inner and outer flange and cross-web joining. S. Zadorozny, Ashley, Pennsylvania.
1,540,586 Fish bait with transverse flexible strips. L. D. Adams, Jet, Oklahoma.
1,540,623 Floating shoe. K. Hashimoto, Tokyo, Japan.
1,540,646 Toe spring for rubbers. M. J. Newhouse, Kenwood, New York.
1,540,668 Spring core for tires with elongated strip of resilient metal. G. H. Truman, Valley City, North Dakota.
1,540,701 Heel-tread pad for horseshoes with elastic connection. J. W. Miller, Red Wing, Minnesota.

June 9, 1925*

1,540,763 Self filling fountain pen. S. V. Corona, Janesville, Wisconsin.
1,540,879 Tube and flap for pneumatic tires. E. Fetter, Baltimore, Maryland.
1,540,924 Pneumatic cushion wheel. J. Bogdan, Newark, N. J. and J. A. Anglada, Jenkintown, Pennsylvania.
1,540,982 Repair patch comprising piece of fabric embedded in rubber. W. Drabold, Detroit, Michigan.
1,541,027 Tire with outer rim having inner retaining flange and removable retaining ring. R. B. Brown, Spokane, Washington.
1,541,043 Resilient cap for the keys of typewriters or similar machines. R. S. Graham, assignor of one-half to W. M. Follmer, both of New York, N. Y.
1,541,044 Resilient cap for the keys of typewriters or similar machines arranged to be removably secured. R. S. Graham, assignor of one-half to W. M. Follmer, both of New York, N. Y.
1,541,045 Resilient cap for the keys of typewriters or similar machines. R. S. Graham, assignor of one-half to W. M. Follmer, both of New York, N. Y.
1,541,125 Automobile tire valve. J. H. Dunn, Beckley, West Virginia.
1,541,234 Antislip shoe sole of elastic material. H. A. McKnight and F. E. Burns, San Francisco, California.
1,541,330 Nursing bottle with nipple. W. M. Decker, Buffalo, New York.
1,541,508 Tire. H. B. Johnston, Seattle, Washington.
1,541,642 Demountable-rim construction. J. E. Hale, Akron, Ohio.
1,541,727 Pipe cover of rubberized, foldable material. C. H. Meyer, San Francisco, California.
1,541,750 Tire gauge. A. G. Park, Baltimore, Maryland.
1,541,756 Closure for conduits with septum of elastic material. O. H. Williams, assignor to The Lancaster Tire & Rubber Co., both of Columbus, Ohio.

The Dominion of Canada

May 12, 1925

249,543 Toy vehicle with seat, rear and front rolling support. F. F. Taylor, Cincinnati, Ohio, U. S. A.
249,572 Rubber and fabric piston packing. The Canadian Westinghouse Co., Ltd., Hamilton, Ontario, Canada, assignee of C. C. Farmer, Pittsburgh, Pennsylvania, U. S. A.
249,592 Child's vehicle of velocipede type. The Hydrate Mechanical Toy Manufacturing Co., Inc., assignee of J. K. Selenkow, both of Brooklyn, New York, U. S. A.
249,609 Air tube for pneumatic tires. The McLeroth Pneumatic Tires (America and Canada) Ltd., assignee of T. B. McLeroth, both of London, W.C.2, England
249,666 Tire valve. A. L. Ryan and W. J. Artz, both of Pittsburgh, Pennsylvania, U. S. A.

May 19, 1925

249,736 Rubber sponge lotion applicator. A. Fearon, Maple Creek, Saskatchewan, Canada.
249,762 Air cushion with rubber tubes. M. Johnston, temporarily of Trentino, Italy, formerly of Guildford, Surrey, England.

May 26, 1925

249,973 Pneumatic tire. W. Drury, London, England.
249,998 Inflatable illuminated toy. B. H. Marshall, Detroit, Michigan, U. S. A.
250,064 Flexible molding. The Dryden Rubber Co., assignee of G. D. Dryden and R. Beynon, all of Chicago, Illinois, U. S. A.
250,065 Molding employing rubber trough section. The Dryden Rubber Co., assignee of G. B. Dryden and R. Beynon, all of Chicago, Illinois, U. S. A.

June 2, 1925

250,158 Resilient tire with rubber blocks set in periphery. W. Combatley, Vancouver, British Columbia, Canada.
250,159 Rubber cushion heel. W. P. Casper, Chicago, Illinois, U. S. A.
250,181 Demountable rim. L. B. Hancock, Richmond, Virginia, U. S. A.
250,193 Foot arch support with endless elastic band. G. H. Jung, Jr., Cincinnati, Ohio, U. S. A.
250,342 Cushion connection for vehicles. The International Motor Co., assignee of A. F. Masury and A. H. Leipert, all of New York, N. Y., U. S. A.
250,343 Housing for rubber block connections. The International Motor Co., assignee of A. F. Masury and A. H. Leipert, all of New York, N. Y., U. S. A.

The United Kingdom

May 6, 1925

230,508 Catamenial appliance secured in socket of india-rubber. E. H. M. Gale, The Rectory, St. Cheverell, Wiltshire.
230,531 Rubber padded horseshoes. C. G. Ayton, 37, Shipston Road, Stratford-on-Avon.
230,554 Tennis balls with windings of rubbered cord. Dunlop Rubber Co., Ltd., 1 Albany street, Regent's Park, London, and A. E. Penfold, Fort Dunlop, Erdington, Birmingham.
230,627 Roller with rubber sleeve, for mangles and wringers. W. Whittaker, 11 Owen street, Accrington, Lancashire.

* Under Rule No. 167 of the United States Patent Office, the issue closes weekly on Thursday, and the patents of that issue bear date as of the fourth Tuesday thereafter.

Chemical patents will be found on page 601. Machinery and Process Patents on pages 604-605

230,635 Balloon tire cover. B. S. Gier, 701 East Saginaw street, Lansing, Michigan, U. S. A.
230,673 Tire boot. R. Braid, Automobile Palace, Abergele Road, Colwyn Bay, Denbighshire.
230,745 Rubber-fabric corset. C. B. Johnes, 42 Warren street, Newark, New Jersey, U. S. A.
230,789 Channel guide for motor car windows. Matthys Freres et Cay, 5 Avenue du General Bernheim, Etterbeek, Brussels.

May 13, 1925

230,939 Horseshoe with hard and soft rubber filling. C. Jordan and J. Marsh, Lanehead Shoeing Forge, Kenyon Lane, and E. Ackers, 200 Newton Road, both in Lowton, Lancashire.
230,943 Cushion tire. A. A. Thornton, 8 Quality Court, Chancery Lane, London. (G. F. Davidson, 2, Institution Hill Mansions, Singapore).
230,946 Crêpe rubber and leather sole. H. B. Rogers, 6 Fox Court, Holborn, London.
231,063 Electric accumulator carrier employing rubber sleeves. J. Bate, 8 St. George's Road, Bedford Park and Vandervell and Co., Ltd., C. A. Warple Way, Acton Vale, both in London.
231,077 Rubber covered fiber packing. J. Cockin, Waterloo Mills, Leeds Road, Huddersfield.

May 20, 1925

231,256 Rubber splash ring moulded to tire. J. Reid, 4 Windsor street, Belfast.
231,289 Electric cable with covering of tough rubber. St. Helens Cable & Rubber Co., Ltd., Trading Estate, and J. H. C. Brooking, The Milestone, Bath Road, both in Slough, Buckinghamshire.
231,333 Surgical trusses with inflatable pad. A. Saunders, 15 Walbrook, London.
231,364 Rubber block horseshoe with renewable calks and treads. G. W. G. Stevenson, 46 Central Drive, Shirebrook, Derbyshire.
231,382 Steel spring wheels connected by rubber bands. F. Berg, 13 Keppler Strasse, Mannheim, Germany.
231,470 Molding crucibles,' employing india-rubber punch. C. T. Porter, assignee of H. E. Porter, both of Bayside, Long Island, New York, U. S. A.

May 27, 1925

231,533 Flexible connections with india-rubber springs. T. I. Duffy, 4246 Sheridan Road, Chicago, Illinois, U. S. A.
231,561 Crêpe rubber tread surfaces with insertions of ordinary rubber. Sir W. Mills, 14 Church Road, Edgbaston, Birmingham.
231,571 Horseshoes. T. Marriott, 26 Middleton Hall Road, King's Norton, Birmingham.
231,579 Elastic stocking. L. E. S. Gellé, 59 Havelock street, Perth, Western Australia.
231,667 Rubber pads, squeegees, etc., for cleaning windows. J. Hedge, 43 Newington Causeway, London.
231,690 Boots with waterproof foot piece. Waverly Rubber Co., Ltd., A. S. Douglas and A. Cockburn, Russell Road, Edinburgh.
231,737 Bathing tent with waterproof sheet. L. E. Stockton, The Manor House, Horley, Banbury, Oxfordshire.
231,739 Wind-screen with flexible rubber strip. J. Levick, Metal Spinning Works, Alma street, Aston, Birmingham.
231,754 Tire and like inflating valves, air tubes and chambers. W. G. Gould, 27 Bridge avenue, Hammersmith, London.
231,761 Spring wheels with inflated rubber tubes. L. J. Donaldson, 29 Zurcherstrasse, Baden, Aargan, Switzerland.
231,768 Non-metallic cushion connections with india-rubber springs. O. Y. Imray, 30 Southampton Buildings, London. (International Motor Co., 25 Broadway, New York, U. S. A.)

New Zealand

April 9, 1925

53,140 Rubber tires with transverse grooves. J. B. Parker, 229 Marton Road, Middlesbrough, York, England.
53,539 Rubber sole or patch. Holdtite Ltd., Daking House, Pitt street, Sydney, N. S. W., assignees of R. Surridge, Jr., 73 Church street, Camberwell, London, England.

April 23, 1925

52,875 Rubber heel-pad. G. G. Anderson, 54 Brunswick Road, East Brunswick, near Melbourne, Australia.
53,420 Pessary of sponge-rubber. G. Hill, Queensville, York, Ontario, Canada.

Germany

413,470 (February 5, 1921). Rubber solutions. Farbenfabriken vorm. Friedrich Bayer & Co., Leverkusen bei Köln am Rhein.
413,853 (March 19, 1924). Porous rubber insole. Dr. Friedrich Hamburger, Vienna; represented by Dr. H. Hederich, Kassel.
414,043 (April 25, 1924). Block belt. (Addition to patent No. 408,777). Rudolf Roderwald, Menzelstrasse 9, Berlin-Grunewald.
414,162 (October 20, 1923). Tire cover. Morgan & Wright, Detroit, Michigan; represented by R. H. Korn, Berlin S. W. 11.
414,365 (November 29, 1923). Elastic double texture fabric. Thuasne & Co., Paris; represented by A. Elliot, Berlin, S. W. 48.
414,393 (October 7, 1922). Injection syringe. Fritz Lorenz, Neulewin, Oderbruch.
414,696 (August 28, 1924). Block belt. (Addition to patent No. 408,777). Rudolf Roderwald, Menzelstrasse 9, Berlin-Grunewald.

ACCORDING TO *Commerce Reports*, THE SHIPMENTS BY the United States to the Philippines of automobiles, tires, and parts reached a total value during the past year of 6,395,000 pesos, the December importation alone being estimated at 308,000 pesos. One peso equals $0.50.

Trade Marks

The United States

Two Kinds of Trade Marks Now Being Registered

Under the rules of the United States Patent Office, trade marks registered under the Act of February 20, 1905, are, in general, fanciful and arbitrary marks, while those registered under the Act of March 19, 1920, Section 1 (b), are non-technical, that is, marks consisting of descriptive or geographical matter or mere surnames. To be registered under the latter act trade marks must have been used for not less than one year. Marks registered under this act are being published for the first time when registered, any opposition taking the form of an application for cancellation.

May 12, 1925, Act of February 20, 1905

198,330 STARTEX—sanitary step-ins, aprons and belts. Star Garter Co., Chicago, Illinois.
198,331 PNEUMA—shoes and leggings of leather, rubber fabrics and combinations of these materials. Pneuma Schuhfabrik A-G, Erfurt, Germany.
198,338 "C-THRU"—rubber nursing nipples and rubber gloves. The Pyramid Rubber Specialty Co., Ravenna, Ohio.

May 12, Act of March 19, 1920

198,360 NU-MAT-IC—key caps for typewriters. Nu-Mat-Ic Key Co., New York, N. Y.

May 19, 1925, Act of February 29, 1925

198,456 Representation of a Puritan enclosed in a double circle and word PURITAN above-rubber and shellac cements. Puritan Cement & Blacking Co., Philadelphia, Pennsylvania.
198,635 The words: Good and Year separated by the symbol of the winged foot of Mercury-ink rolls, rubber mallets, hammer-cushions used on steam or electric power hammers, and band-saw bands used on pulley wheels. The Goodyear Tire & Rubber Co., Akron, Ohio.

May 19, 1925, Act of March 19, 1920

198,657 GOLDEN STATE—belting, hose, machinery packing and nonmetallic tires. E. B. McKay, Chicago, Illinois.

May 26, 1925, Act of February 20, 1905

198,682 Representation of warrior with helmet and words: MAN-O-WAR below—leather, rubber and fibrous boots, shoes and slippers, and rubber and composition heels for boots, shoes and slippers. M. Samuels & Co., Baltimore, Maryland.
198,690 The words: MIN ETTE with last letter ending in streamer bearing the word: BLOOMERETTE—sanitary aprons in the form of bloomers. M. S. Hulley, Ozone Park, New York.
198,740 Representation of a star containing the word: ASTROLITH—lithopone. St. Louis Lithopone Co., St. Louis, Missouri.
198,756 Representation of a jumping jack and underneath the words: JUMPING JACK—children's shoes consisting of leather and rubber boots, leather, rubber and fabric shoes and combination leather and fabric shoes. C. Gotzian & Co., St. Paul, Minnesota.
198,768 PLA-MOR—ladies' leather, canvas, rubber and fabric boots and shoes. Burrows Shoe Co., Rochester, New York.
198,781 Representation of an arch with the words: DUO-ARCH above-boots and shoes of leather, rubber, fabric, and combinations. Commonwealth Shoe & Leather Co., Whitman, Massachusetts.
198,796 QUADRAT—rubber overshoes. Baltic India Rubber Co. "Quadrat," Riga, Latvia.

June 2, 1925, Act of February 20, 1905

199,030 PAVLOWA—hosiery, shoes and slippers of rubber, leather, fabric or combinations of these materials. J. Klausner, New York, N. Y.
199,043 FORTMASON—boots, shoes, hats, sweaters, gloves, etc., made of leather, rubber, fabric or combinations thereof. Fortnum & Mason, Ltd., London, England.
199,082 Representation of a boy and girl playing with balloons, with insert in the shape of a spool in the center—rubber toy balloons, cloth-covered, leather-covered, hollow and solid rubber play balls and rubber toy daggers. The Barr Rubber Products Co., Sandusky, Ohio.
199,156 JIFFYKNIT—baby pants and sanitary bloomers. I. B. Kleinert Rubber Co., New York, N. Y.
199,170 The word: ELK with a representation of an elk—prophylactic rubber articles for the prevention of contagious diseases. L. Hilsenbeck, New York, N. Y.

June 2, 1925, Act of March 19, 1920

199,277 The word: LEWIS, the first letter lengthened to contain the word: RUBBER—shock absorbers for vehicles. Lewis Rubber Snubber Co., Portland, Oregon.

June 9, 1925, Act of February 20, 1905

199,286 The words: DOCTOR KREELL'S on a distinctive slate shaped background—boots, shoes and slippers made in major part of leather, fabric or rubber. N. Fisher & Co., New York, N. Y.
199,287 CHANTICLEER—bathing caps. I. B. Kleinert Rubber Co., New York, N. Y.
199,294 STAON—heels and top lifts of rubber and analogous materials. The Century Rubber Specialty Co., Baltimore, Maryland.
199,307 SUPRE-MACY enclosed in border—automobile tires and tubes. R. H. Macy & Co., Inc., New York, N. Y.

199,319 Representation of a bear seated on a tire holding to a patch, with the words "IT'S HOT—BUT I'M HERE!" issuing from his mouth, and the words: WHITE BEAR GRIP on the bear, while underneath are the words: "I CANNOT BEAR TO LEAVE THEE" —patches for tires, inner tubes, rubber boots and overshoes, garden hose, hot-water bottles, and other articles made of rubber. White Bear Patch Co., New Orleans, Louisiana.

199,338 The words: TWO JACKS with a representation underneath of the Jack of Hearts and the Jack of Diamonds—tire shoes. Gauer-Lawson Co., Chicago, Illinois.

199,340 EPCO—liquid bituminous cement for bonding purposes in construction work. Elaterite Products Corporation, New York, N. Y.

199,377 BUCKS—footballs, handballs, basket, tennis and golf balls, tennis and squash rackets, tennis posts, golf sticks, dumb-bells and Indian clubs. J. Wanamaker, Philadelphia, Pennsylvania.

199,378 MAYFAIR—footballs, handballs, basket, tennis and golf balls, tennis and squash rackets, tennis posts, golf sticks, dumb-bells and Indian clubs. J. Wanamaker, Philadelphia, Pennsylvania.

199,396 Representation of a flap in place on a rim, the flap being colored and having a rectangular hatched portion—flaps for automobile rims. North Eastern Rubber Co., Elizabeth, New Jersey.

199,429 DUOWRAP—tires. Ajax Rubber Co., Inc., Millbrook, New York.

199,461 COVERTEX—waterproofed or unwaterproofed articles. Chicago Textile Products Co., Chicago, Illinois.

199,464 VAC-U-HOLDUP—suction-cup devices for holding purposes. Mayer Manufacturing Corporation, Chicago, Illinois.

199,473 SUPERFLEX—rubber tires. Pirelli & C., Milan, Italy.

199,526 RITA STEP IN—boots, shoes and slippers made of leather, rubber, canvas or textile material. The Munroe Shoe Co., Inc., Auburn, Maine.

199,528 LUSTER-LITE—waterproof coats and capes. New York Mackintosh Clothing Co., New York, N. Y.

199,529 The letters B F enclosed in double circle which contains the words: B. FRIEDMAN SHOE CO., INC., NEW YORK, and beneath the circles are the words: The Right Shoes on Time—shoes made of leather, rubber or fabric and combinations of these materials. B. Friedman Shoe Co., Inc., New York, N. Y.

199,548 LITENTUF—rubber boots. The B. F. Goodrich Co., New York, N. Y.

The Dominion of Canada

Registered

37,746 Representation of a tire surrounding the globe—tires and tubes composed of rubber or rubber and fabric. The Goodyear Tire & Rubber Co. of Canada, Ltd., Toronto, Ontario.

37,747 Letter "A"—golf balls. The Goodyear Tire & Rubber Co. of Canada, Ltd., Toronto, Ontario.

37,748 Letter "B"—golf balls. The Goodyear Tire & Rubber Co. of Canada, Ltd., Toronto, Ontario.

37,749 Letter "D"—golf balls. The Goodyear Tire & Rubber Co. of Canada, Ltd., Toronto, Ontario.

37,750 The words: Good and Year separated by the symbol of the winged foot of Mercury—golf balls. The Goodyear Tire & Rubber Co. of Canada, Ltd., Toronto, Ontario.

37,801 Letters: P. N. in combination with the word: PerfectioN, the first and last letters of which are capitals—corselettes, corsets, brassieres and bandeaux of rubber, knitted, netted or textile fabric or combinations of rubber, knitted or textile fabrics. I. Newman & Sons, Inc., New York, N. Y., U. S. A.

37,843 The word: "ITSOL."—heels, tips, soles and pads for boots and shoes all made of india-rubber. I. T. S. Rubber Co., Ltd., 42, Great Russell street, London, W. C. 1, England.

The United Kingdom

May 6, 1925

453,439 PANCO—india-rubber heels, soles and half-soles for boots and shoes. Panther Rubber Co., Ltd., 39, Jencks Lane, Sherbrooke, Quebec, Canada.

455,792 RUBGROUTE—manufactures from bitumen and clay for use in road making. Universal Rubber Paviors (Manchester, 1923) Ltd., Chatham Street Rubber Works, Canning street, Audenshaw, near Manchester.

455,793 RUBJOINTING—manufactures from bitumen and clay for use in road making. Universal Rubber Paviors (Manchester, 1923) Ltd., Chatham Street Rubber Works, Canning street, Audenshaw, near Manchester.

455,794 RUBSPRAY—manufactures from bitumen and clay for use in road making. Universal Rubber Paviors (Manchester, 1923) Ltd., Chatham Street Rubber Works, Canning street, Audenshaw, near Manchester.

456,895 STABEC—electrical insulating substances made of india-rubber. The New Eccles Rubber Works, Ltd., Monton Road, Eccles, Lancashire.

457,138 A monogram of the initials U R P enclosed in double circle—manufactures from mineral and other substances for road making. Universal Rubber Paviors (Manchester, 1923) Ltd., Chatham Street Rubber Works, Canning street, Audenshaw, near Manchester.

457,143 Within a circle the representation of a lion; around this the words: THE NORTH BRITISH enclosed in a double circle—boots, shoes and overshoes made of india-rubber, and waterproof garments. The North British Rubber Co., Ltd., Castle Mills, Fountainbridge, Edinburgh, Scotland.

May 20, 1925

451,275 BELDAM'S—india-rubber washers and rings. The Beldam Packing & Rubber Co., Ltd., 29, Gracechurch street, London, E. C. 3.

457,503 ITSOL—all goods included in class 40. I. T. S. Rubber Co., Ltd., 42, Great Russell street, London, W. C. 1.

May 27, 1925

454,867 RUBITEX—waterproof roofing material. Ruberoidwerke Aktien Gesellschaft, Dovenhof, Hamburg 8, Germany. Address for service in the United Kingdom is, care H. T. P. Gee, Staple House, 51 and 52 Chancery Lane, London, W. C. 2.

457,833 Scroll containing word: AVENUE—fabrics made from india-rubber and gutta-percha. W. & C. Dunlop, Ltd., 46, Peckover street, Bradford, Yorkshire.

458,345 BONZO—goods manufactured from india-rubber and gutta percha. J. G. Savagar, 43, Brompton Road, London, S. W. 3.

Designs

The United States

67,309 TIRE TREAD. Term 14 years. J. A. Scheid, Roxborough, Pennsylvania.

67,401 RESILIENT TIRE. Term 14 years. A. Hargraves, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

67,427 NONSKID TIRE TREAD. Term 14 years. C. G. Miller, assignor to McClaren Rubber Co., both of Charlotte, North Carolina.

67,515 TIRE. Term 14 years. W. R. Gillam, Tallmadge, assignor to Lambert Tire & Rubber Co., Barberton, both in Ohio.

67,535. TIRE TREAD. Term 3½ years. E. B. McKay, Chicago, Illinois.

The Dominion of Canada

6,681 SOLE PAD FOR BOOTS AND SHOES. I. T. S. Rubber Co., Ltd., 42, Great Russell street, London, W. C. 1, England.

Germany

905,429 (February 7, 1925). Injection syringe. Hermann Rommeiss and Karl Rommeiss, Arnstadt.

905,436 (February 14, 1925). Fruit shaped rubber balloon. M. M. v. d. Heyden. Helmstedterstrasse 17, Berlin-Wilmersdorf.

905,442 (February 20, 1925). Sponge container. Harburger Gummiwaren Fabrik Phoenix A.-G., Harburg an der Elbe.

905,471 (March 9, 1925). Stream regulator with rubber attachment. Franz J. Lück, 4 Kirchnerstrasse, Frankfurt am Main.

905,680 (March 13, 1925). Massage rubber suction cup. Max Baginski, Potsdamerstrasse 32, Berlin.

905,718 (January 9, 1925). Rubber handle for lever. Comfräsch, A.-G., Berlin.

905,776 (March 12, 1925). Rubber sole to be attached by stitching. Michael Schiela, Dachau.

905,902 (March 17, 1925). Powder atomizer. Gustav Meyer, Zella-Mehlis.

906,065 (February 26, 1925). Rubber hose with cord spirals imbedded in rubber. Hansens Gummi- und Packungswerke, Paul & John Hansen, Hannover-Wülfel.

906,232 (March 14, 1925). Lid holder of rubber with felt drip-pad. Siegfried Wetwicka, Mendelssohnstrasse 4, Hamburg.

906,333 (March 17, 1925). Rubber bottle. E. Kübler & Co., m. b. H., Berlin-Reinickendorf.

906,353 (March 20, 1925). Suction stopper with rubber cap top and dropper at end. Albert Höhler, Löhrstrasse 2, Koblenz.

906,389 (February 14, 1925). Rubber sponge. Wilhelm Fromhold, Naumburg a. d. S.

906,411 (March 2, 1925). Bathing neckband of sheet rubber. Firma Carl Plaat, Köln-Nippes.

906,412 (March 2, 1925). Tire of crimped sheet rubber. Firma Carl Plaat, Köln-Nippes.

906,538 (March 17, 1925). Rubber nipple with attached disk ring. Pharmazeutische Industrie-Gesellschaft, Offenbach am Main.

906,551 (March 21, 1925). Pneumatic tampon. Hermann Haertel, Weidenstrasse 33, Breslau.

906,553 (March 23, 1925). Pocket of rubberized fabric for sanitary bandage. Walter Albert Becher, Arndtstrasse 12, Zwickau, Saxony.

906,626 (March 5, 1925). Sponge rubber cover for field-glasses. Emil Busch, A.-G., Optische Industrie, Rathenow.

906,759 (January 24, 1925). Tire protector. Fanny Selig, nee Kahn, Luisenstrasse 44, Frankfurt am Main.

906,769 (February 17, 1925). Atomizer. Scholl A.-G., Pforzheim.

906,808 (March 20, 1925). Sanitary bandage. Belinde-Werke A.-G., Wandsbek.

907,015 (December 22, 1924). Rubber heel patch for footwear. Nollesche Werke, Komm.-Ges., Weissenfels a. d. S.

907,022 (February 12, 1925). Elastic pessary. Martin Mückenhaupt, Röthenbach a. d. Pegnitz.

907,056 (March 18, 1925). Protective cover consisting of several layers of fabric held together by rubberizing and a rubber layer on one side. Franz Krüger, Beethovenstrasse 31, Saarbrücken.

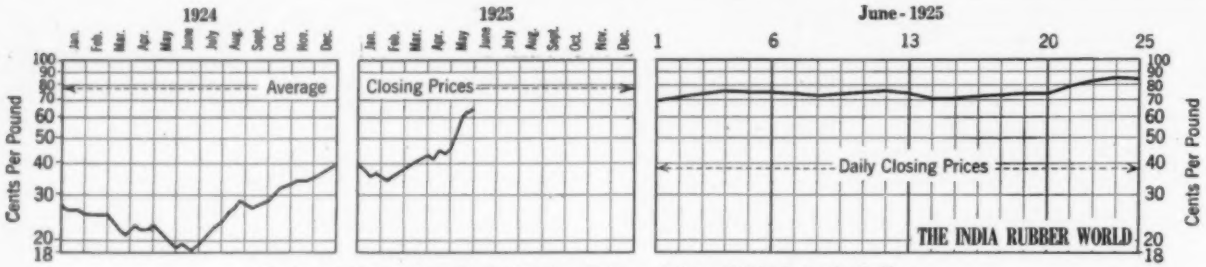
907,067 (March 23, 1925). Working dress of rubber Gummiwarenfabrik M. Steinberg, Köln-Lindenthal.

907,133 (February 14, 1925). Lace shoe with rubber shoe string. Rosa Schwarzer, nee Ramé, Arcisstrasse 47, Munich.

Labels

The United States

28,756 SKOOKUM—cross-expansion spiral piston packing. Pioneer Rubber Mills, San Francisco, California.



Ratio Graph of New York Closing Prices of Spot Ribbed Smoked Sheets

Review of the Crude Rubber Market

New York

THE upward movement of crude rubber prices which began a year ago continues unabated. The level now reached is that of the war prices of 1917. This rise has been effected by restriction of output of British controlled plantations under the Stevenson plan. A year ago spot rubber was at 18 cents with about 8 or 9 months' visible supply. Under restriction and the large and increasing demand of the American tire industry the visible supply of rubber is estimated now at 3 months' supply. Spot rubber has disappeared from the market. All that exists is being held for higher prices to recover on earlier sales at lower levels. Factories in need of rubber for current orders and outside speculators endeavoring to cover short sales are responsible for the strength of the market.

The fact that rubber manufacturers failed to support the market a year ago and to secure a greater release of rubber thus forestalling the abnormal advance may be explained by the fact that such a course would not have been allowed under the conservative financial policy of many American rubber companies.

The last week of May spot ribbed smoked sheets opened at 62¼ buyers, 62½ sellers. From the middle to the close of the week prices advanced due to inquiries of consuming interests and the fact that London stocks were being held for top prices. The first week in June still further advances were recorded and future positions rose to levels which eliminated the wide disparity that was existent between them and spot. On Saturday the market weakened and many cheap offers from the East were refused by New York dealers. The demand was steady for July, August and September rubber.

The market of week ended June 13 was rather quiet. On higher London cables and strong demand spot advanced to 75 cents, buyers 75½ cents, sellers on Thursday followed by a sharp drop and fluctuations due to profit taking.

The following week the market opened weaker because of liquidation by London speculators. Prices declined early but strengthened at mid-week, spot ribs closing on Saturday at 72½ cents buyers, 73 cents sellers, an advance of 3 cents over the opening price of the week. Factory buyers continued to hold off but showed much interest in October-December position. Three of the largest American factories were reported buying heavily in the Far East this week.

Spot prices opened the last week of the month at 79¾ buyers, 80 sellers for ribs. In three days the market advanced 7 cents a pound to 85½ buyers, 87 sellers on June 24. This was caused by shorts covering nearby positions and also to firmer cables from London and the Far East. On June 25 the activity ceased and prices receded 3½ cents. The premium of ribs over crêpe on this date was 3½ cents.

The heavy pressure for spot by large consuming interests has passed and consumers' market interest centers at present in the October-December position.

The monthly record on ribbed smoked sheet futures shows as follows: June 1, June, buyers and sellers 68; July, buyers and sellers, 66½; August-September, buyers and sellers, 62¾; October-December, buyers and sellers, 57; January-March, buyers and sellers, 56. June 20, June, buyers 72½, sellers 73; July, buyers 71½, sellers 72; August-September, buyers 67⅞, sellers 68; October-December, buyers 59¾, sellers 60; January-March, buyers 57½, sellers 58.

There was a differential of about 2 cents spot in favor of ribs over first latex crêpe all through the month. On June 25 ribs were 83½ cents and crêpe 80 cents.

Parás are scarce and advancing with plantation grades. Balatas are firm but neglected.

Importations of all grades during May, 1925, were 36,889 tons, compared with 23,914 tons one year ago. Plantation arrivals for May were 34,187 tons, compared with 22,466 tons one year ago. Total importations of plantation rubber for five months ended May 31 were 140,877 tons, compared with 130,501 tons for the corresponding period of 1924. Total importations of all grades of rubber for the five months ended May 31 were 151,450 tons compared with 137,476 tons for the corresponding period of last year.

New York Spot Closing Rubber Prices

Prices in Cents Per Pound

PLANTATIONS	May, 1925						June, 1925																
	25	26	27	28	29	30*	1	2	3	4	5	6	8	9	10	11	12	13	15	16	17	18	19	20
Sheet																								
Ribbed smoked	63	62⅞	63¼	65⅞	69½	....	69½	72	74⅜	76½	75¼	75¾	74⅞	73⅝	74	75¼	76⅜	74⅞	71⅛	71⅜	72⅝	73¼	75½	76¼
Crêpe																								
First latex	61⅜	61⅜	61¾	64⅛	68¾	....	68¾	71⅜	73⅛	75¼	75¼	75½	73⅝	72½	72¼	72⅝	73⅜	72⅛	68⅞	69½	71	71⅝	74	74⅜
Off latex	61	60⅜	60⅞	63½	68	....	68	70	72⅝	73¼	73⅜	73⅜	72¼	71⅛	70⅞	70½	72	70	67¾	67¾	69⅝	70	71⅜	71⅞
No. 2 blanket	60⅞	61	61¼	63½	65⅞	....	65⅞	68⅞	70⅝	72¼	72	72	71¼	70⅜	70⅜	68⅝	69½	68⅛	65⅞	65¼	66	65¼	68	69¼
No. 3 blanket	60¼	60¼	60¼	62½	65⅛	....	65⅛	68¼	70	71⅜	71⅛	71⅛	70½	69⅛	69⅜	67⅝	68½	67	64⅛	64⅛	65	64¼	67	68
No. 4 blanket	59½	59¼	59⅝	61¼	64½	....	64⅜	67¾	69⅜	70½	69¼	69¾	69⅜	68	68	66⅝	67⅛	65⅞	62⅞	63	63½	63¼	66	67
Thin, clean brown	60½	60⅛	60½	62¼	65¾	....	68¾	68⅝	69⅞	71¾	71⅝	71⅝	70⅞	70	70⅛	68⅜	69⅛	67⅞	64½	65½	66	64¾	67	68
Specky brown	59⅝	59⅝	59⅞	61⅜	65	....	65	68	69¼	70¼	69⅞	69⅞	69¼	68⅛	68⅜	66⅜	67	65½	62⅝	64	64¾	63¼	65½	66⅜
Rolled brown	58¼	58¼	58¾	60½	63⅛	....	63⅛	66⅛	68¼	68⅜	68¾	68¾	68⅛	67⅛	67⅛	64⅜	65⅛	63⅜	60	61½	62	62⅛	63¼	64

* Holiday.

Spot and future quotations on standard plantation and Brazilian grades were as follows:

PLANTATION. June 1. Spot first latex crêpe, 69 cents; June, 68 cents; July, 66½ cents; Aug.-Sept., 62¾ cents; Oct.-Dec., 57 cents; Jan.-Mar., 56 cents.

June 25. Spot first latex crêpe, 78-80 cents; July, 76-78 cents; Aug.-Sept., 74-75 cents; Oct.-Dec., 66-67 cents; Jan.-Mar., 62-63 cents.

June 1. Spot ribbed smoked sheets, 70 cents; June, 70 cents; July, 66¾ cents; Aug.-Sept., 62¾ cents; Oct.-Dec., 57 cents; Jan.-Mar., 56 cents.

June 25. Spot ribbed smoked sheets, 82-83½ cents; July, 79-80 cents; Aug.-Sept., 74-75 cents; Oct.-Dec., 67-67½ cents; Jan.-Mar., 62-63 cents.

June 1. Spot No. 2 amber crêpe, 67¼ cents; June, 67 cents; July, 66 cents; Aug.-Sept., 60 cents; Oct-Dec., 54 cents; Jan.-Mar., 52 cents.

June 25. Spot No. 2 amber crêpe, 70½-72 cents; July, 69-70 cents; Aug.-Sept., 67-68 cents; Oct.-Dec., 60-61 cents; Jan.-Mar., 57-58 cents.

June 1. Spot No. 1 rolled brown crêpe, 65 cents; June, 64 cents; July, 62 cents; Aug.-Sept., 58 cents; Oct.-Dec., 54 cents; Jan.-Mar., 52 cents.

June 25. Spot No. 1 rolled brown crêpe, 62½-64 cents; July, 61-63 cents; Aug.-Sept., 61-62 cents; Oct.-Dec., 55-57 cents; Jan.-Mar., 54-55 cents.

SOUTH AMERICAN PARAS AND CAUCHO. June 1. Spot, upriver fine, 52-53 cents; islands fine, 48½-49 cents; upriver coarse, 41½ cents; Cametá, 25½-26 cents; caucho ball, 42½-43 cents.

June 25. Spot, upriver fine, 68-70 cents; islands fine, 60-62 cents; upriver coarse, 52-54 cents; Cametá, 34-36 cents; caucho ball, 54-56 cents.

London

The June London market opened stronger on month-end settlement and covering by American operators, spot, buyers 36*d*, sellers 36½*d*. Crêpe was at a differential of 4*d* under ribs. Spot was scarce and the demand caused a rapid advance culminating June 6 at 38⅞*d* sellers. From this level the price sagged to 37¼*d*.

On June 11 interest centered actively in October-December futures and spot again touched 38*d*. The next week trading was irregular, opening at 38*d* sellers and closing at 37*d* sellers with trend upward. June 25 spot ribs were 39⅜*d* sellers, the highest since March, 1917.

The weekly reports of London stocks show a marked decline over the records for the previous month. The weekly stocks were as follows: June 1, 5,691 tons; June 8, 5,455 tons; June 15, 5,630 tons; June 22, 5,423 tons.

Singapore

Opening quiet and firm, the June market bare of spot stock, followed closely the London advances. Futures were strong and a wide spread in views developed between buyers and sellers. June 23 prices advanced 1¼*d* and 2*d* a pound on the strength of London and New York markets.

Comparative Low and High New York Spot Rubber Prices

	1925*	June 1924	1923
PLANTATIONS			
First latex crêpe	$0.69 @ $0.85	$0.19⅛ @ $0.21	$0.25½ @ $0.29½
Smoked sheet, ribbed	.70 @ .87	.18⅜ @ .19¾	.25½ @ .29½
PARAS			
Upriver, fine	.52 @ .71	.20 @ .21½	.26¾ @ .29
Upriver, coarse	.41 @ .54	.13¼ @ .14	.25⅝ @ .25
Islands, fine	.48½ @ .62½	.18 @ .19	.25¼ @ .27¼
Islands, coarse		.11¼ @ .11½	.16 @ .17
Cametá	.25½ @ .37	.10½ @ .11	.13¼ @ .14¼

*Figured to June 25, 1925.

CHILE'S IMPORTS OF AMERICAN MECHANICAL GOODS

During the past year Chile has imported from the United States large amounts of mechanical rubber goods at the following values: rubber belting, $250,912; hose, $59,857; and packing, $18,466. These figures compare most favorably with those for the year 1922, when the totals were as follows: rubber belting, $61,094; hose, $81,606; and packing, $6,141. It will be noted that the 1924 value for rubber belting is more than four times greater than that for 1922, the figure for the March, 1924, shipment alone reaching $53,353.

DURING THE YEAR 1924 AMERICAN EXPORTS OF RUBBER BELTING, hose and packing reached values respectively of $2,089,056, $1,728,776, and $838,364, as compared with corresponding figures for the year 1922 of $1,268,235, $1,340,244, and $546,115.

New York Quotations

Following are the New York spot rubber quotations, for one year ago, one month ago, and June 25, the current date:

	June 24, 1924	May 23, 1925	June 25, 1925
Plantation Hevea			
Rubber latex (Hevea) *per gal.*	$1.25 @	$2.40 @	$2.85 @
CREPE			
First latex	.19⅛ @	.64 @ .64½	.78 @ .80
Off latex	.18½ @	.63¾ @ .64	.77 @ 79
Amber No. 2	.17¾ @ .18	.63 @	.70½ @ .72
Amber No. 3	.17¼ @ .17¾	.62¾ @	.68½ @ .70
Amber No. 4	@	.62½ @	@
Brown, clean, thin	.17¾ @	.63 @	.68½ @ .70
Brown, specky	.17 @	.62½ @	.66½ @ .68
Brown, roll	.16½ @ .17	.61 @ .62	.62½ @ .64
Sole crêpe	.45 @	.63 @	.83 @
SHEET			
Smoked, ribbed	.18 @ .18¼	.64½ @ .65	.82 @ .83½
East Indian			
PONTIANAK			
Banjermassin	.06 @ .07¼	.07 @ .08½	.09 @ .10
Palembang	.07½ @	†.09 @	@
Pressed block	.12 @ .15	.14 @	.15 @
Sarawak	.06¾ @	.08½ @	.09 @
South American			
PARAS			
Upriver, fine	.20 @	.48 @	.70 @
Upriver, fine	*.26½ @	*.64 @	*.89 @
Upriver, medium	.17½ @ .18	.45 @	.62 @
Upriver, coarse	12¾ @ .13	.40 @	.55 @
Upriver, coarse	*.23½ @ .24½	*.59 @	*.80 @
Islands, fine	19 @	.44 @	.60 @ .62
Islands, medium	.17 @	@	@
Islands, coarse	.11¼ @ .11½	@	@
Cametá	.11 @	@	.34 @ .36
Acre, Bolivian, fine	.20¾ @	.50 @	.71 @
Acre, Bolivian, fine	*.27 @	*.64 @	*.90 @
Beni Bolivian	.21½ @	@	.71 @
Madeira, fine	.22 @	.50 @	.72 @
Peruvian, fine	.19 @	@	.68 @
Tapajos, fine	.18½ @ .19	@	.69 @
CAUCHO			
Upper caucho ball	.12¾ @ .13½	.40 @	.57 @
Upper caucho ball	*.22 @ .24	*.59 @	*.80 @
Lower caucho ball	.12 @ .12½	.38 @	.57 @
Maniçobas			
Ceará negro heads	.19 @	.40 @	†.50 @
Ceará scrap	.18 @	.19 @	†.35 @
Maniçoba 30% guaranty	.16 @	.35 @	†.50 @
Mangabeira, thin sheet	.20 @	.40 @	†.50 @
Centrals			
Central scrap	.13½ @	†.37 @	.50 @ .51
Central wet sheet	.09 @	†.30 @	@
Corinto scrap	.13½ @	.37 @ .38	.50 @ .51
Esmeralda sausage	.13½ @	.38 @ .39	.50 @ .51
Guayule washed and dried	.22 @	.43 @	.52 @
Africans			
Black Kasai	†.16 @ .17	.57 @	@
Black Upper Congo	†.16 @ .17	.57 @	@
Red Upper Congo	†.15 @ .16	.52 @	@
Kasai Loanda	@	.53 @	@
Upper Congo Arumini	@	.55 @	@
Masai (Konakry)	@	.55 @	@
Gutta Percha			
Gutta Siak	.16 @	.17½ @ .18	.18 @ .18½
Gutta Soh	.28½ @	.28 @ .30	.28 @ .29
Red Macassar	2.90 @ 3.00	3.00 @ 3.75	2.75 @ 3.00
Balata			
Block, Ciudad Bolivar	.65 @	.66 @ .67	.63 @ .65
Colombia	.54 @	.54 @ .55	.52 @ .54
Panama	.54 @	†.54 @	.52 @ .54
Surinam, sheet	.75½ @	.78 @	.76 @ .78
amber	.78 @	.85 @ .86	.80 @ .85
Chicle			
Honduras	‡.58 @ .68	‡.58 @ .68	‡.58 @ .68
Yucatan, fine	‡.58 @ .68	‡.58 @ .68	‡.58 @ .68

*Washed and dried crêpe. Shipment from Brazil.
†Nominal.
‡Duty paid.

Reclaimed Rubber

The demand for reclaim continues to increase as the scarcity of crude spot rubber becomes more pronounced and its price advances.

Orders continue in excess of reclaiming capacity. All plants are working on 24 hour schedule and wherever feasible are enlarging capacity with additional equipment and concentrating on the output of staple grades. It is believed that thus the rate of production of reclaims has been advanced 20 to 25 per cent above normal output.

Current quotations are advanced very moderately over those of a month ago. In most instances the new prices are only fractionally higher. Further upward movement in quotations will probably follow continued advances in crude rubber.

The quotations given below are nominal.

New York Quotations

June 25, 1925

Auto Tire			
Black	lb.	$0.09¼ @	$0.09¾
Black, washed	lb.	.11 @	.11½
Black, selected tires	lb.	.11½ @	.12
Dark gray	lb.	.11¼ @	.11½
Light gray	lb.	.13¾ @	.13½
White	lb.	.16 @	.16½
High Tensile Black			
Super-reclaim, No. 1	lb.	.23 @	.24
No. 2	lb.	.14 @	.15
Shoe			
Unwashed	lb.	.09 @	.09½
Washed	lb.	.12¾ @	.13
Tube			
No. 1	lb.	.18 @	.18½
No. 2	lb.	.14 @	.14½
Uncured Tire Friction			
No. 1	lb.	.45 @	.50
No. 2	lb.	.35 @	.40
Miscellaneous			
High grade, red	lb.	.15½ @	.16
Truck tire	lb.	.09¼ @	.09½
Mechanical blends	lb.	.07½ @	.08½

British Malaya

Rubber Exports in May

An official cablegram from Singapore to the Malay States Information Agency, London, states that the rubber exported from British Malaya in May totalled 26,667 tons. The amount of rubber imported was 12,979 tons, of which 10,665 tons were declared as wet rubber.

The following are comparative statistics:

	1924		1925	
	Gross Exports Tons	Foreign Imports Tons	Gross Exports Tons	Foreign Imports Tons
January	23,844	8,867	19,183	10,132
February	19,305	7,440	21,622	10,071
March	22,294	8,269	26,836	13,399
April	20,551	7,909	22,414	11,750
May	19,674	7,259	26,667	12,979
Totals	105,758	39,744	116,722	58,331

Distribution

Destination	April, 1925 Tons	May, 1925 Tons
United Kingdom	1,729	3,350
United States of America	17,526	19,294
Continent of Europe	2,131	2,137
British Possessions	244	276
Japan	752	1,584
Other foreign countries	32	26
Totals	22,414	26,667

Dealers' Stocks of Rubber

The Malay States Information Agency, 88 Cannon Street, London, E. C. 4, England, has received a cablegram stating that dealers' stocks of rubber in Singapore on May 31 last amounted to 13,502 tons and in Penang 2,302 tons.

DURING THE CALENDAR YEAR 1924, THE UNITED STATES IMPORTED 769,109,376 pounds of crude rubber, value $177,453,935. Official statistics also estimate American imports of chicle for this period at 7,918,670 pounds, value $3,970,540.

The Market for Rubber Scrap

The marked activity in the reclaiming industry has been strongly reflected in the movement of scrap grades, particularly tire stocks and inner tubes, and prices on these items show moderate advances over those of a month ago. Scrap collectors' ideas are in advance of the market but every advance in prices tends to widen the area from which scrap supplies can be drawn and this serves to depress prices by increasing the supply. The net result of all the operative influences allows only moderate upward movement.

BOOTS AND SHOES. These grades are virtually stationary in price and are being displaced by tires and tubes even in lines where they formerly dominated the demand. They list as the lowest division in the present market.

INNER TUBES. The demand for inner tubes is strong and offerings light. Price advances were as follows: No. 1, ½ cent; No. 2, ¼ cent; red, 2⅞ cents, and mixed tubes, 1⅛ cents.

MIXED TIRES. These are in good demand. The supply is more than ample but holders are inclined to insist upon a greater price advance than is warranted by the situation. The reclaimers are now paying from $1.00 to $2.00 per ton over prices of a month ago and purchasing fairly heavy tonnages.

Quotations for Carload Lots

June 25, 1925

Boots and Shoes			
Boots and shoes, black	lb.	$0.02½ @	$.02⅝
Red and white	lb.	.01⅜ @	.01⅝
Trimmed arctics, black	lb.	.01⅝ @	.01¾
Untrimmed arctics	lb.	.01⅜ @	.01½
Tennis shoes and soles	lb.	.01 @	—
Hard Rubber			
No. 1 hard rubber	lb.	.11 @	.12
Battery jars, black compound	lb.	.03 @	.03
Inner Tubes			
No. 1 floating	lb.	.06½ @	.06¾
No. 2, compounded	lb.	.04½ @	.04¾
Red	lb.	.04½ @	.04¼
Mixed tubes	lb.	.04½ @	.04¾
Mechanicals			
Mixed black scrap	lb.	.01⅛ @	.01⅜
Heels	lb.	.00¾ @	.00⅞
Hose, air-brake	ton	20.00	@22.00
regular	ton	17.00	@20.00
No. 1 red	lb.	.02 @	
No. 2 red	lb.	.01¼ @	
Red packing	lb.	.00¾ @	
White, druggists' sundries	lb.	.02⅝ @	
Mechanical	lb.	.01¼ @	
Tires			
Pneumatic Standard—			
Mixed auto tires with beads	ton	21.00	@22.00
Beadless	ton	26.00	@28.00
White auto tires with beads	ton	25.00	@26.00
Beadless	ton	36.00	@40.00
Mixed auto peelings	ton	30.00	@35.00
Solid—			
Mixed motor truck, clean	ton	41.00	@42.00

EXPORTS OF PLASTERS AND ADHESIVE TAPES

Among the large quantities of druggists' rubber sundries exported from the United States during the past year should be included the totals for medicated plasters, in which adhesive tapes are included. The total amount exported reached the high figure of 488,387 pounds, value $616,801. The twelve chief customers for these goods were: Japan, taking 98,385 pounds, value $79,263; England, 78,813 pounds, value $96,136; Canada, 47,290 pounds, value $49,838; Argentina, 40,149 pounds, value $59,462; Australia, 39,106 pounds, value $52,001; Brazil, 31,146 pounds, value $44,265; Mexico, 23,940 pounds, value $40,826; China, 23,660 pounds, value $25,676; Germany, 18,458 pounds, value $20,279; Spain, 12,003 pounds, value $37,465; Cuba, 16,230 pounds, value $21,444; and Colombia, 9,750 pounds, value $14,883.—*Commerce Reports.*

The Market for Chemicals and Compounding Ingredients

New York

RUBBER compounding ingredients have been, for the most part, in active movement chiefly due to full schedule production effective in the tire producing plants. Prices in general remain unchanged except for an advance in benzol and reductions in certain accelerators.

The high prices prevailing for crude rubber have stimulated close study of rubber compounding and the possibilities of economy in that direction offered by several of the well known ingredients in the list.

ACCELERATORS. The recent drop in the price of certain accelerators, particularly diphenyl guanidine, was occasioned by the entry into the market of a large chemical manufacturing company. This concern has developed a new process which results in the production of D P G of a very high degree of purity, the principal raw materials for which are obtained from other products manufactured by the company. It is thus in a position to supply the rubber trade with a thoroughly dependable article.

BENZOL. The market has held firm and consuming demand well sustained although there was an advance of one cent per gallon on each grade previous to the middle of the month.

CARBON BLACK. There has been a steady increase in the current requirements of the rubber trade particularly in the tire division and carbon black grades have held firm in price without advances on rubber grades. Tire manufacturers are realizing more and more the value of carbon black as a reinforcing pigment and in its use are increasing its proportion relative to rubber with marked advantage to the wearing quality of the finished products.

CLAYS. Properly prepared clays are indispensable in current rubber compounding practice for filling and reinforcing against abrasive wear. The output of clays for this purpose is steadily increasing.

LITHARGE. Pig lead price quotations rallied later in May without increase in the prices of lead oxides. Rubber manufacturers were active buyers early in the month but for most of the period business was mostly good routine in volume.

SOLVENT NAPHTHA. Supplies at firm prices have proved adequate to meet the very active demand.

SUBLIMED LEAD. The advance in pig lead quotations stiffened the price somewhat but left it unchanged. Trading slow and confined to small lots.

WHITING. All grades continue at very low prices and in steady routine shipment.

ZINC OXIDE. The month has shown continuously good business from rubber manufacturers at prices firm and unchanged.

New York Quotations

June 25, 1925

Accelerators, Inorganic

Lead, carbonate	lb.	$0.10¾	@
Lead, red	lb.	.11¾	@
sublimed blue	lb.	.10¾	@
sublimed white	lb.	.10¾	@
Lime, flour	lb.	.01¾	@ $0.02½
R. M. (factory)	lb.	.01¾	@
R. M. hydrated	ton	14.00	@
superfine	lb.	.01½	@ .02
Litharge	lb.	.11¼	@ .12½
Magnesia, carbonate	lb.	.06½	@ .08
calcined, light (bbls.)	lb.	.24	@ .40
calcined, ex. light (bbls.)	lb.	.40	@
calcined, md. light (bbls.)	lb.	.15	@
calcined, heavy (bbls.)	lb.	.04	@ .06½
magnesium, carbonate, light	lb.	.07	@
Orange mineral A.A.A.	lb.	.14	@
Rubber lead	lb.	.11	@

Accelerators, Organic

A-7	lb.	.75	@ .85
A-19	lb.	.85	@ .95
Accelemal	lb.	.30	@
Aldehyde ammonia	lb.	.93	@
Anhydro formaldehyde aniline	lb.	.38	@
Anhydroformaldehyde-para-toluidine	lb.	.99	@
Aniline (factory)	lb.	.17	@
Benzidine (base)	lb.	.76	@
Benzyl aniline	lb.		@
Cryline	lb.		@
paste	lb.		@
powder	lb.		@
D. P. G. salt	lb.	.89	@
Diethyl amine	lb.		@
Dimethyl amine	lb.		@
Dimethylaniline	lb.	.34	@
Di-ortho-tolylguanidine	lb.	1.13	@
Di-ortho-tolylthiourea	lb.	.32	@
Diphenyl guanidine	lb.	.98	@
Ethyl aniline	lb.		@
Ethylidene aniline	lb.	.65	@
Ethyl-o-toluidine	lb.		@
Excellerex	lb.	.30	@ .35
Formaldehyde aniline	lb.	.42½	@
Hexamethylene tetramine	lb.	.82½	@
Lead oleate (fact'y)	lb.	.18	@
Methylene aniline	lb.	.32	@ .36
Methylenedianilide	lb.	.40	@
No. 999	lb.	.17½	@
Shawinigan paraldehyde	lb.	.17	@ .19
Para-nitrosodimethylaniline	lb.	.99	@
Paraphenylene diamine	lb.	1.25	@ 1.30
Quinodine	lb.	.40	@
Super-sulphur, No. 1	lb.	.50	@ .55
No. 2	lb.	.20	@ .30
Tensilac No. 39	lb.	.70	@
No. 40	lb.	.65	@
Thiocarbanilide	lb.	.25	@ .32
Trimene	lb.		@
Trimene base	lb.		@
Triphenylguanidine	lb.	.70	@ .75

Acids

Acetic 28% (bbls.)	100 lb.	3.38	@
glacial (carboys)	lb.	.16	@
Creaylic (95% straw color)	gal.	.59	@ .63
(95% dark)	gal.	.56	@ .60
Sulphuric, 66° (carboys)	lb.	.02	@

Alkalies

Caustic soda	100 lbs.	3.10	@ 4.00
flake, 76% (factory)	100 lbs.	3.60	@ 4.31
solid, 76% (factory)	100 lbs.	3.20	@ 3.91

Colors

BLACK

Bone	lb.	.08	@ .10
Carbon:			
A. & W. nonfli	lb.	.40	@
Aerfloted arrow	lb.	.07	@ .12
Compressed	lb.	.07	@ .11
Uncompressed	lb.	.07	@ .11½
Micronex	lb.	.08	@ .12
Lampblack	lb.	.10	@ .14
Shawinigan	lb.	.17	@ .18
Thermatomic carbon	lb.	.04	@

BLUE

Cobalt	lb.	.20	@ .25
A. & W. blue	lb.	2.00	@ 4.00
Prussian	lb.	.35	@ .40
Ultramarine	lb.	.10	@ .35

BROWN

Iron oxide	lb.	.04	@ .05
Sienna, Italian	lb.	.06	@ .07½
Umber, Turkey	lb.	.04½	@ .05

GREEN

Chrome, light	lb.	.29	@ .30
medium	lb.	.30	@ .31
dark	lb.	.32	@ .34
commercial	lb.	.10	@ .10½
A. & W. green	lb.	2.00	@ 3.00
Oxide of chromium	lb.	.34	@ .51
T. K.	lb.	.40	@ .45

RED

Antimony, golden	lb.		@
golden T. K.	lb.	.18	@ .22
golden R.M.P. No. 7	lb.	.20	@
golden pentasulphide, T. K.	lb.	.33	@ .35
golden, 15/17% G. E.	lb.	.20	@ .25
golden, No. 1	lb.	.25	@
golden, No. 2	lb.	.17	@
Antimony, crimson	lb.		@
crimson T. K.	lb.	.45	@ .50
crimson, 15/17% G. E.	lb.	.35	@ .40
crimson, R.M.P. No. 3	lb.	.50	@
7-A	lb.	$0.35	@
Z-2	lb.	.20	@
Vermilion, 5% F. S.	lb.	.65	@
Antimony			
Vermilion 15/17% F.S.	lb.	.50	@
Arsenic, red-sulphide	lb.		@
A. & W. red (4 shades)	lb.	1.50	@ 3.00
purple	lb.	2.00	@ 3.00
Iron oxides			
domestic	lb.	.12	@
English	lb.	.11½	@
English Indian	lb.	.10	@ .11
Indian, pure	lb.	.06	@ .11
pure bright	lb.	.11	@ .14
reduced	lb.	.07	@ .10
Spanish	lb.	.02¾	@ .04
Levigated, waterfloated	lb.	.02½	@
Venetian	lb.	.02	@ .05½
Oximony	lb.	.13¼	@
Pará toner	lb.	.90	@ 1.00
Toluidine toner	lb.	1.95	@ 2.10
Vermilion, English	lb.	1.35	@
quicksilver	lb.	1.40	@ 1.45

WHITE

Akcolith	lb.		@
Albalith	lb.	.06⅜	@ .06⅝
Aluminum bronze	lb.	.55	@ 1.20
Lithopone	lb.	.05¾	@ .07
Sterling	lb.	.06⅜	@ .06⅝
Azolith	lb.	.06⅛	@ .06⅜
Imported prime	lb.	.07	@
T. O. pigment	lb.	.15	@ .17
Zinc oxide			
AAA, lead free	lb.	.08	@ .08¼
Azo (factory):			
ZZZ (lead free)	lb.	.07¼	@ .08¼
ZZ (5% leaded)	lb.	.06¾	@ .07¼
Z (8.10% leaded)	lb.	.06¾	@ .07¼
French process, Florence brand			
Green seal	lb.	.10¾	@ .11¼
Red seal	lb.	.09¾	@ .10¼
U. S. P.	lb.	.15	@ .16½
White seal	lb.	.11¼	@ .12¼
Horse Head brands			
Selected	lb.	.08½	@ .08¾
Special	lb.	.08¼	@ .08¾
XX red	lb.	.08	@ .08¼
Leaded brands			
Lehigh	lb.	.07¼	@ .07½
Standard	lb.	.07¼	@ .07½
Sterling	lb.	.07¼	@ .07½
Superior	lb.	.07¼	@ .07½
Palmerton process			
Kadox, black	lb.	.10¾	@ .11¼
blue	lb.	.09¾	@ .10¼
red	lb.	.08¾	@ .09¼
Snow white	lb.		@

YELLOW

Arsenic	lb.	.65	@ .75
Chrome	lb.	.18	@ .20
A. & W. yellow	lb.	2.50	@ 4.00
Ochre, domestic	lb.	.02	@ .02½
imported	lb.	.03	@ .03½

Compounding Ingredients

Aluminum flake (sacks C. L.)	ton	$21.85	@
(sacks L. C. L.)	ton	24.50	@
Ammonia carbonate	lb.	.13½	@ .15
Are-o-sole	ton	10.00	@14.00
Asbestine	ton	13.00	@25.00
Aluminum silicate	ton	25.00	@30.00
Barium, carbonate (bbl.)	ton	54.00	@56.00
dust	lb.	.05	@ .06
Barytes, imported white	ton	30.00	@36.00
pure white	ton	30.00	@35.00
water ground and floated	ton	23.00	@26.00
Basofor	lb.	.04½	@
Blanc fixe, dry	ton	75.00	@77.50
pulp	ton	53.00	@56.00
Carrara filler (factory)	lb.	.01¼	@ .02
Chalk, precip. extra light	lb.	.04½	@ .05
heavy (f.o.b. factory)	lb.	.03½	@ .04
Clay, Dixie	ton	20.00	@35.00
Blue ribbon (C. L. fcty.)	ton	14.00	@
Blue Ridge, dark	ton	9.00	@
light	ton	12.00	@
Catalpo (facty.)	ton	35.00	@40.00
China	lb.	.01½	@
China, L. H. B.	ton	13.00	@22.50
English, L. H. B.	lb.	.02½	@ .02¾
Langford	ton	12.00	@
Cotton flock, black	lb.	.12	@ .13
light-colored	lb.	.12	@ .13
white	lb.	.16	@ .25
Cotton linters clean mill-run	lb.	.05	@
Glue, high grade	lb.	.21	@ .29
medium	lb.	.18	@ .24
low grade	lb.	.14	@ .17
Graphite, flake	lb.	.06½	@ .12
Infusorial earth (pow'd)	lb.	.03½	@
Lime (bolted)	lb.	.01½	@ .02
Mica, amber	lb.	.05	@
Pumice stone, powd.	lb.	.03	@ .05
Rotten stone (bbls.)	lb.	.02½	@ .04½
Slate flour (facty.)	ton	8.50	@15.00
Soap bark, cut	lb.	.09	@ .09½
Soapstone	ton	15.00	@25.00
Sodium bicarbonate (bbls.) 100 lbs.		2.00	@
Starch, powd. corn			
Buffalo (bbls.) 100 lbs		4.44	@ 4.54
(bags) 100 lbs.		4.17	@ 4.27
Talc, soapstone	ton	15.00	@22.00
Terra blanche	ton	25.00	@30.00
Whiting, domestic No. 33	ton	10.00	@
chalk, L. H. B.	ton	16.00	@25.00
commercial (facty.) 100 lbs.		.90	@ 1.00
English, imported	lb.	.01¼	@
English, cliffstone (factory)			
gilders (bolted) 100 lbs.		1.25	@ 1.35
Paris White 100	lbs.	1.50	@ 1.75
Nelco	ton	11.00	@22.50

Chemical Market—*Continued*

New York Quotations

June 25, 1925

Whiting			
Perfection	ton	$22.00	@$25.00
Quaker	ton	13.00	@15.00
Snow-white, E. L. B.	ton	19.00	@25.00
Sussex	ton	8.00	@10.00
Witco (C. L.)	ton	12.00	@
Wood pulp, XXX (facty.)	ton	35.00	@
X (facty.)	ton	25.00	@
Mineral Rubber			
Genasco (facty.)	ton	50.00	@
Gilsonite	ton	33.00	@56.00
Granulated M. R.	ton	35.00	@45.00
Hydrocarbon, hard	ton	29.00	@35.00
Hydrocarbon, soft	ton	29.00	@35.00
Mineral Flour	ton		@
Ohmlac Kapak, K-R	ton		@
K-4	ton		@
320/340 m. p. hydrocarbon	ton	47.00	@52.00
300/310 m. p. hydrocarbon	ton	42.00	@47.00
Pioneer, M. R., solid (fac.)	ton	42.00	@44.00
M. R. granular	ton	52.00	@54.00
Robertson, M. R., solid, (facty.)	ton	35.00	@75.00
M. R. (gran. facty.)	ton	42.00	@80.00
Paradura	ton	60.00	@62.50
Rubrax (facty.)	ton	60.00	@
Resins and Pitches			
Tar, pine, retort	bbl.	15.00	@15.50
kiln	bbl.	15.50	@16.00
Pitch, Burgundy	bbl.	6.50	@
coal tar	ton	30.00	@
Fluxol hardwood	lb.	.02	@ .05
pine tar	bbl.	8.50	@
ponto	bbl.	6.50	@
Rosin, K (bbl.) 280 lbs.		11.25	@
strained (bbl.) 280 lbs.		11.05	@
Shellac, fine orange	lb.	.55	@ .57
Peanut, crude	lb.	.13	@
refined	lb.	.14	@
Petrolatum, standard	lb.	.06	@ .08
Petrolatum, sticky	lb.	.08	@ .10
Pine, steam distilled	gal.	.62	@ .63
Rapeseed, refined	gal.	1.08	@
blown	gal.	1.22	@
Rosin	gal.	.50	@ .58
Soya bean	lb.	.13¼	@ .13½
Tar	gal.	.28	@ .35
Woburn	lb.	.05	@
Oils (Softeners)			
Avollas compound	lb.	.12	@ .13
Castor, No. 1, U. S. P.	lb.	.16¼	@
No. 3, U. S. P.	lb.	.16¼	@
Corn, crude (bbls.)	lb.	.12½	@
Cotton, Summer yellow	lb.	.12½	@
Cycline	gal.	.30	@ .35

Oils (Softeners)—*Continued*			
Glycerine	lb.	$0.19	@$0.19½
Linseed, raw	gal.	1.20	@
Liquid rubber	lb.	.11	@
Moldrite	lb.	.05	@ .06
Palm lagos	lb.	.10	@
clarified	lb.	.09½	@ .10
Palm, niger	lb.	.09¾	@
Parra M. R. flux	lb.	.06	@ .07
Solvents			
Acetone (98.99%, [6.62 lbs. gal.])	gal.	1.50	@ 1.55
Benzol (90%, 7.21 lbs. gal.) pure	gal.	.24	@ .29
Carbon bisulphide (10.81 lbs. gal.) 99.9% pure (drums)	lb.	.06½	@ .07¼
tetrachloride (13.28 lbs. gal.) 99.7% pure (drums)	lb.	.07	@ .08
Gasoline			
No. 303			
Tankcars	gal.	.22	@
Drums, C. L.	gal.	.25	@
Drums, L. C. L.	gal.	.28	@
Motor gas (steel bbls.)	gal.	.22	@
Naphtha, V. M. & P.	gal.	.21½	@
68° Bé., 122°, 324°	gal.	.21	@
70° Bé., 114°, 314°	gal.	.22	@
71° Bé., 112°, 304°	gal.	.23	@
Turpentine, spirits	gal.	1.01	@
wood, steam distilled	gal.	.90	@
Substitutes			
Black	lb.	.08	@ .15
Brown	lb.	.10	@ .15
White	lb.	.09½	@ .16½
Brown factice	lb.	.09	@ .15
White factice	lb.	.09	@ .16
Vulcanizing Ingredients			
Black hypo	lb.	.18	@
13% F. S.	lb.	.20	@
Sulphur chloride (drums)	lb.	.04½	@ .05
Sulphur, soft rubber, 100% pure (C.L.) 100 lbs.		2.35	@ 2.60
(L.C.L.) 100 lbs.		2.65	@ 2.90
Sulphur, Brooklyn brands			
Refined velvet (bbls.) 100 lbs.		2.60	@ 3.15
(bags) 100 lbs.		2.35	@ 2.90
Superfine flour (bbls.) 100 lbs.		2.35	@ 2.90
(bags) 100 lbs.		1.95	@ 2.50
Rubber makers 100	lbs.	3.25	@ 4.00
(See also Colors—Antimony)			
Waxes			
Wax, beeswax, white, com	lb.	.55	@ .65
ceresine, white	lb.	.10	@ .11
carnauba	lb.	.38	@ .40
montan	lb.	.06	@ .06¼
ozokerite, black	lb.	.24	@ .25
green	lb.	.26	@ .30
Paraffin			
122/124 white crude scale	lb.	.05½	@
124/126 white crude scale	lb.	.05½	@
120/122 fully refined	lb.	.05½	@
125/127 fully refined	lb.	.05¾	@

AERO DIPHENYL GUANIDINE

The manufacturers of Aero brand diphenyl guanidine have gotten away from the old thiocarbanilide process and are producing D P G of exceptional purity at a saving in cost of manufacture. Analysis of Aero D P G by the laboratories of three of the leading rubber companies in the United States indicate, the manufacturers say, superior purity.

MOLDRITE

Moldrite is a new rubber softener adapted for compounding in stocks for hard rubber, mechanicals, tires and other molded rubber goods. The neutral oil-base and waxes contained in Moldrite are said to be the most volatile of their kind, hence their efficiency as a softener and binder, with a minimum quantity used. The neutral oil disappears entirely during vulcanization, leaving only such elements as exude to the surface which in turn cause easy separation of the rubber from the mold eliminating the process of lubricating the mold.

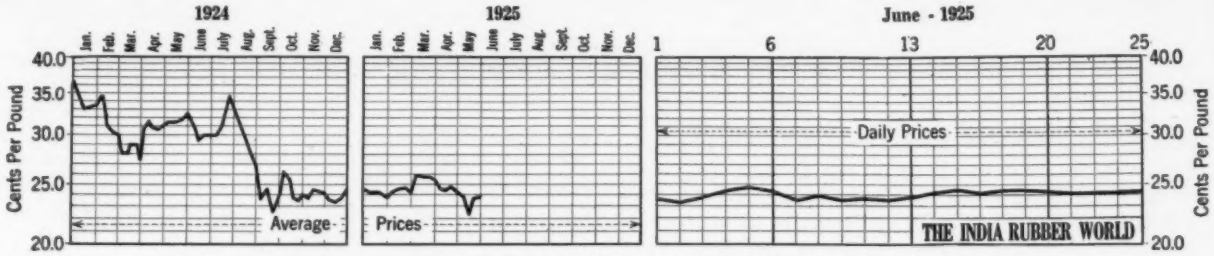
The high test oleate present in Moldrite does not burn out during vulcanization or evaporate with age but supplies the molded article with just enough lubrication to give the maximum aging quality.

IMPROVED CATALPO

The patented compounding ingredient known as Catalpo has been improved recently by changing the base clay. Laboratory and road tests of Catalpo as now produced show in vulcanized rubber goods remarkable effects. Catalpo is a peptized kaolin or clay absolutely grit free. Not only is the sand, mica, grit, etc., removed but also the coarse particles of clay. It has the smallest particle size possible in kaolin, in consequence such objections as lamination or layering are reduced to a minimum. Tensile strength, elongation and resistance to abrasion of Catalpo stocks are distinctly higher than those given by unprocessed clay. It ages perfectly and is being used regularly in inner tubes. This is a very important point in view of the considerable savings possible at the prevailing high prices of crude rubber.

PEERLESS LIME

Peerless white lime or hydrated lime is mined from rock that is practically pure carbonate of lime. It is quarried by tunneling, hand picked and calcined in kilns operated with producer gas fuel preventing contamination from ash, clinker and dirt. It is prepared for rubber work and other special uses of fineness of 99 per cent through 200 mesh.



Ratio Graph of New York Daily Prices of Spot Middling Upland Cotton

The Market for Cotton and Other Fabrics

New York

AMERICAN COTTON. Spot middlings at the beginning of the month were 23.65 cents and 24.00 cents on June 25. The highest point reached was 24.70 cents on June 5, since then the price has fluctuated within narrow limits between 23½ and 24½ cents. Spot interest is at low ebb. The chief concern is regarding the new crop prospects which are at this time very promising.

The first crop condition report from government sources set the condition at 76.6 and the revised acreage planted for this year as 45,000,000, indicating a prospective yield of 15,000,000 bales if average conditions hold for the season. These figures are probably the highest for the season and show that the crop is getting better than an average start.

Early in the month one trade authority pointed out that two factors, the effects of which are as yet little in evidence, but may have a controlling influence on the crop, are the increased weevil emergence in the Southeast and the scanty supply of sub-soil moisture in parts of Texas.

EGYPTIAN COTTON. The report on long staple cotton is essentially the same as last month which indicated that last season's shortage will be remedied by increased acreage. Old crop Uppers and Sakels hold strong but new crops continue to work off. In other words the difference in prices is still narrowing. Staple cottons are dull and very little actual business is being done.

On May 30 Egyptian cotton c.i.f. Boston was quoted as follows: Medium Sakellaridis 59⅛ cents, off 2⅜ cents from May 20; Medium Uppers 36 cents, off 3/16 cents. On June 20 prices were improved, Medium Sakellaridis 60⅞ cents, up 1⅛ cent from June 10, Medium Uppers 36-7/16 cents, up 1-15/16 cents.

Cotton Fabrics

DUCKS, DRILLS AND OSNABURGS. The market for these fabrics has been more active the past ten days. Prices are firmer. Contracts are being placed into the third quarter of the year. The general tone of the market is improved. Supplies in consumers' hands are believed to be low. The market for hose and belting ducks is active for this period of the year. In general the heavy cotton goods markets continue to show activity also in the producing division but all agents are complaining of the lack of profit.

SHEETINGS. Buying during the past ten days has improved somewhat, especially in the lighter weight cloths. The artificial leather trade has been more active. Some buyers think the market is dragging on the bottom and look for higher prices. Conditions are much better than a year ago to the extent that mills will not curtail production to the extent anticipated.

TIRE FABRICS. The market is quiet although there are steady small orders received for filling-in purposes and occasional orders looking toward continued production in the mills now running. Prices are very low based on 20-21 cent cotton and offers for fabric are much too low to interest the mills.

Square-woven fabric tires are rapidly disappearing on account of balloon cord tire development and the high prices of rubber. The latter feature may exert a noticeable influence in reducing the use of cord fabric through output curtailment of small companies.

Fabric mills find difficulty in obtaining the required staple cotton. The sharp premium in the price is not alone the problem but the actual finding of the required grades above 1-1/16 inch is even more a matter of concern to the mills. Fabric prices show very little change.

New York Quotations

June 25, 1925

Drills

38-inch 2.00-yard	yard	$0.21 @
40-inch 3.47-yard		.12½ @
52-inch 1.90-yard		.22¾ @
60-inch 1.52-yard		.28⅜ @

Duck

38-inch 2.00-yard	yard	.22½ @
40-inch 1.47-yard		.30 @
72-inch 16.66-ounce		.52½ @
72-inch 17.21-ounce		.53¾ @
MECHANICAL		
Hose and belting	pound	.41 @
Specials		.45 @
TENNIS		
52-inch 1.35 yard	yard	.34½ @

Hollands

DEAD FINISH		
Standard, 37-inch	yard	.19½ @
42-inch		.23½ @
RED SEAL		
36-inch		.18 @
40-inch		.19 @
50-inch		.30 @
FLAT FINISH		
Imperial, 36-inch		.15½ @
40-inch		.17½ @

Osnaburgs

40-inch 2.35-yard	yard	.18⅛ @
40-inch 2.48-yard		.17⅜ @
40-inch 3.00-yard		.14⅜ @
37-inch 2.42-yard		.17¾ @

Raincoat Fabrics

COTTON		
Bombazine 64 x 60	yard	.13½ @
Bombazine 60 x 48		.12½ @
Plaids 60 x 48		.13 @
Plaids 56 x 44		.12½ @
Surface prints 60 x 48		.12½ @
Surface prints 64 x 60		.13½ @

Sheetings, 40-inch

40 x 48, 2.50-yard	yard	.15¼ @
48 x 48, 2.85-yard		.13 @
64 x 68, 3.15-yard		.13¾ @
56 x 60, 3.60-yard		.11 @
48 x 44, 3.75-yard		.10 @

Sheetings, 36-inch

48 x 48, 5.00-yard	yard	$0.08 @
40 x 40, 6.15-yard		.06¼ @

Tire Fabrics

SQUARE WOVEN 17¼-ounce		
Egyptian, karded	pound	.65 @
Peeler, karded		.48 @
CORD 23/5/3		
Egyptian, combed	pound	.73 @
Egyptian, karded		.67 @
Peeler, combed, 1 1/16-in.		@
Peeler, karded, 1 1/16-in.		.48 @
CORD 13/3/3		
Peeler, karded	pound	.45 @
LENO BREAKER		
8-oz. Peeler, karded	pound	.48 @
10-oz. Peeler, karded		.48 @
CHAFER		
8.25-oz. Peeler, karded	pound	.58 @
9.5-oz. Peeler, karded		.54 @
12-oz. Peeler, karded		.51 @
14-oz. Peeler, karded		.46 @

The Cotton Outlook

Crop Condition 76.6 Per Cent Normal

THE first cotton crop report of the season, issued by the Crop Reporting Board of the Department of Agriculture on June 2 as of May 25, estimates the condition of the crop at 76.6 per cent of normal, as compared with 65.6 for the same date in 1924, 71.0 in 1923, 69.6 in 1922, and 72.0 the average of the last ten years.

The condition, as reported, is the highest since 1918. This, however, does not necessarily imply an equally favorable situation later in the season. Two factors, the effects of which are as yet little in evidence, but may have a controlling influence on the crop are the increased weevil emergence in the Southeast and the scanty supply of sub-soil moisture in parts of Texas.

Weevils are much more in evidence in the eastern states than they were last year. They have appeared in every county in South Carolina and everywhere in southern Georgia and Florida. Few reports of weevil have been received from the West or eastward to Alabama and the generally dry weather in the western area has been favorable to the insect. Grasshoppers are present in considerable numbers in Texas, but have done little damage as yet. Lice are holding back the crop in southern Texas and in some of the drier sections of that state.

Cotton was planted about a week earlier than usual in most of the belt except Texas, where it was several days late, being held back by drought, and in Oklahoma, where the planting date was practically the same as last year.

The preparation of the soil was better over practically the entire belt because of the early favorable season. Fields have nearly everywhere been well cultivated. Fertilizers are being used more freely in some states and apparently less so in others, but the quality of the fertilizer is quite generally better than last year.

No estimate of acreage will be published by the Crop Reporting Board until the condition report to be issued July 2, but private reports vary from 43,000,000 to 45,000,000 acres. The *Journal of Commerce* returns from its cotton correspondents in twelve states indicate a total of 42,819,000 acres and the condition of the crop 73.0 per cent and averaging about seven days late. This represents a gain of 4.7 per cent in acreage, as compared with 2.6 per cent last year. Present indications point to a yield of 157.4 pounds of lint cotton per acre, states the *Journal of Commerce*, which indicates a total crop of 14,099,813 478-pound bales, exclusive of linters. Following the good sized crop of 1924, a large yield this year, it is believed, would do more than a great many other things to help the general cotton textile situation.

Federal Grades for Cotton Linters

Federal grades for cotton linters will be issued by the Department of Agriculture as tentative standards effective August 1 for one year, pending the establishment of permanent grades under the cotton standards act.

Foreign Cotton Crops

Reports of the new cotton crop in foreign countries of the northern hemisphere so far are generally favorable.

In Egypt, private forecasts indicate that the acreage is as large or larger than 1924, but with reseedings as great or slightly larger than last year. Although slightly backward, the new crop is healthy in condition.

The area planted in Russia up to May 1 is stated by the International Institute of Agriculture to be 1,401,000 acres, which is 17 per cent greater than the total area last year.

In Mexico, conditions are less favorable. The lack of irrigation water in the Laguna district has resulted in a heavy curtailment in the acreage planted. The condition of the crop both there and in Lower California is favorable according to last reports.

Southern Mills Curtail Operations

Southern mills operating a total equipment of approximately 7,250,000 spindles and 141,783 looms have joined a movement to curtail operations to the extent of one week's production, or about 25 per cent, before August 15 in an attempt to strengthen the goods market. Other mills having orders to keep them busy through the period specified will curtail before September, many of them to an extent greater than one week's production. Present indications are that at least 10,000,000 spindles will join the movement. Mills making novelties and fancies are better supplied with orders than those making staple fabrics. Denim mills throughout the country are increasing their curtailment and diversifying 25 to 30 per cent of their products to other fabrics. Several leading merchants handling the product of southern mills are at work on plans to divert the machinery from sheetings, drills, osnaburgs and other staples, which in their opinion will not be profitable for a long time.

Larger Cotton Crops Urged to Reduce Prices

Delegates from all parts of the world to the International Cotton Congress at Vienna, Austria, have adopted a resolution pointing out the necessity of extending the growing of cotton in order to meet the world's demand for cotton goods at lower prices. Governments are urged to stimulate interest among the growers in the extension of cultivated areas, and to promote the construction of irrigation and drainage works. The executive committee of the Congress is requested to give special attention to the question of cooperating to the fullest possible extent with American cooperative growers' associations.

Cotton Consumption Large as Compared with 1924

Cotton consumed during May showed a considerable decrease from the April maximum, although the total was much greater than for May last year. Census Bureau figures give the May consumption as 531,471 bales of lint and 61,187 of linters, compared with 597,104 of lint and 59,036 of linters consumed in April this year and 413,967 of lint and 42,661 of linters in May last year.

Comparative consumption totals this year and last for the cotton season beginning August 1 are shown by months in the following table:

Month	1924–'25	1923–'24
August	357,455	492,483
September	435,216	485,665
October	532,620	543,260
November	492,233	532,702
December	532,047	463,789
January	589,725	576,604
February	550,132	508,677
March	582,674	485,840
April	597,104	478,583
May	531,471	413,967
Total	5,200,686	4,981,570

It will be noted that beginning with December, consistent gains month by month are shown for this season compared with last. The August figure for 1924 was far behind that of the same month in 1923, but September was better. October and November were still behind, but 1924-1925 as a whole has surpassed 1923-1924 through subsequent steady gains until the seasonal drop in May.

Stocks of cotton on hand May 31 were held as follows:

In consuming establishments, 1,348,304 bales of lint and 154,632 of linters, compared with 1,514,514 of lint and 162,861 of linters on April 30 this year and 1,157,428 of lint and 122,480 of linters on May 31 last year.

In public storage and at compresses, 1,134,920 bales of lint and 45,225 of linters, compared with 1,666,147 of lint and 49,663 of linters on April 30 this year and 1,126,282 of lint and 72,844 of linters on May 31 last year.

Cotton Futures Act Amended

Several amendments have been made to the cotton futures act and approved by Secretary Jardine to become effective June 15. Notable among the changes is the reduction of the inter-market transfer unit of certified cotton for delivery on future contracts from 100 to 25 bales. This does not apply to transfers within a market.

The regulations have also been amended to provide for recognition of the exchange inspection bureau established by the Chicago Board of Trade. The formation of a board of cotton examiners at Houston, Texas, is also to be recognized.

Printed copies of the revised regulations may be had from the Department of Agriculture.

Cloth Markets Wait on Season's Crop Yield

Some leading merchants are expressing the view that no broad improvement in cloth demand can occur until crop conditions have reached such a stage that it will be possible for cloth buyers to reach more accurate judgments as to the volume of this season's crop yields and the probable worth of cotton itself.

The unusual premiums commanded for cotton for immediate use make it unwise to buy if the new crop is to be as large as the current one. Cloths may be even lower if the price of cotton falls when the new crop begins to move, and there is no guarantee in the present outlook that it will not fall. The opinion is commonly expressed that trade is likely to lag through June and July, and possibly until well into August, not only because of the cotton uncertainty, but also because of the changing sentiment in the West, where wheat and other crop reports are not as good as anticipated.

From the manufacturer's standpoint it is more prudent to decline business now offered at much under actual replacement cost, and curtail production until the cloth buyer revises his present ideas or is impelled to bid higher to secure goods needed for filling-in purposes. Some merchants and mill agents take the same view and are urging cooperation among manufacturers toward curtailment of mill production at once. Curtailment is believed to be the only method the mills can use at this time to offset the small-lot operations of buyers that will have any lasting effect upon the market in its broadest sense. It is said that curtailment in drills and osnaburgs has been going on for some time without attracting attention.

Stocks of staple cotton goods in mill warehouses, wholesale and retail channels are known to be much smaller than a year ago. It is reported that conferences are under way looking toward contracting for auto supply materials and tire fabrics to be delivered in the last quarter of the year.

Metal Market Review

New York

During the middle and latter part of June there was more activity in the copper market, with prices higher, while quotations for lead also showed some advance. In the steel market, developments remained both favorable and unfavorable, as has been the case for the past two months. According to the *Iron Age*, "on the whole, the first half of June has not borne out the better indications seen at the opening of the month; at the same time it has brought no material change in volume of new business or rate of steel consumption."

ALUMINUM. Quotations for virgin metal, 98 to 99 per cent pure, continue unchanged at 27 to 28 cents a pound, delivered.

ANTIMONY. The reported disturbances in China have created a strong demand for parcels afloat. The spot market remains quiet, with prices firm at 16½ cents duty paid f.o.b. New York.

COPPER. Better quotations are being recorded for copper, while the statistical position of the metal was further strengthened by knowledge that stocks in consumers' hands were low and that production by certain individual organizations was being curtailed. Unfortunately American copper producers, facing bitter competition both here and abroad, have little chance for redress. In an editorial entitled "Where Rubber and Copper Stand," the *Wall Street News* contrasts the market situation of these two important and essential commodities, and emphasizes "the acutely divergent methods of producers here and abroad." While the British rubber interests, "with the benevolent assistance of government agencies, restricted the output and deliveries of the raw product until finally prices rose to a point admittedly satisfactory to the producers . . . . . the copper men are working under handicaps which foreign producers can effectively thrust aside. . . . . American mining and refining organizations may not, under the law, even arrange mutually to hold down the output." The editorial concludes by stating that there is "a belief in economic circles that ultimately great copper consolidations will be worked out as a measure of control of the market situation."

LEAD. The present situation in the lead market where demand has subsided is not considered weak, but rather a readjustment following the too rapid advance of lead a few weeks ago.

STEEL. According to compilations prepared by the American Iron and Steel Institute, steel ingot production declined 3½ per cent in May, while the April output fell off 14½ per cent as compared with March. The total ingot production for the first five months of the year reached 85.6 per cent of capacity, while in the best post-war year, 1923, the average operation was 80 per cent. The average for the industry during June was 65 to 70 per cent.

TIN. Consumers continue to display little interest in this market, and for several weeks sales have been light. The advance in spot tin was reflected in futures which were also higher.

ZINC. The market generally continues quiet, although demand from domestic consumers has somewhat improved. Prices however have held well, with little varying.

Basic Metals

June 23, 1925

	Cents per pound	
Aluminum, virgin, 98@99 per cent	27.00	@28.00
Antimony	16.50	@17.00
Copper—Lake, spot	13.875	@14.00
Electrolytic, spot	13.875	@
Castings, refinery	13.375	@
Lead, spot, New York	8.20	@ 8.30
Lead, spot, East St. Louis	7.85	@ 7.90
Nickel, ingot, pound	34.00	@
Tin, spot	56.125	@
Zinc, spot, New York	7.30	@ 7.325
Zinc, spot, East St. Louis	6.95	@ 6.975

Steel Wire

BASE PRICE* ON NO. 9 GAGE AND COARSER

	Cents per pound	
Bright basic	4.25	@
Annealed soft	4.50	@
Galvanized annealed	5.15	@
Coppered basic	5.15	@
Tinned soft Bessemer	6.15	@

* Regular extras for lighter gage.

Copper Wire

BASE PRICE F. O. B. FACTORY.

	Cents per pound	
Bare copper wire	16.00	@
No. 6 B. & S. gage	16.00	@
No. 8 B. & S. gage	16.00	@
No. 14 B. & S. gage	17.00	@

Exports of India Rubber Manufactures from the

EXPORTED TO	Belting Value	Hose Value	Packing Value	Thread Value	Boots Pairs	Boots Value	Shoes Pairs	Shoes Value	Canvas Shoes with Rubber Soles Pairs	Canvas Shoes with Rubber Soles Value	Soles and Heels Value	Waterproofed Auto Cloth and Rubberized Fabrics Value
EUROPE												
Austria	$44	$11	.....	.....	.....	.....	48	$45	3,552	$2,407	.....	$154
Azores & Madeira Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$58	.....
Belgium	5,734	5,694	$992	$4,746	.....	.....	.....	.....	210	270	50	1,180
Bulgaria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Czechoslovakia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Denmark	790	641	1,666	.....	1,030	$2,641	236	251	26,046	18,411	1,027	835
Finland	2,453	.....	.....	.....	.....	.....	.....	.....	2,160	1,170	603	105
France	5,641	1,018	1,506	25,046	12	36	.....	.....	98	134	.....	8,033
Germany	538	.....	197	11,576	960	3,536	525	852	8,185	7,602	.....	3,429
Gibraltar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greece	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hungary	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iceland & Faroe Islands	.....	.....	.....	.....	1,003	2,941	3,103	5,247	.....	.....	.....	.....
Italy	.....	.....	.....	.....	.....	.....	.....	.....	462	402	90	.....
Latvia	2,670	.....	.....	12,660	.....	.....	.....	.....	.....	.....	.....	.....
Malta, Gozo and Cyprus Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Netherlands	1,239	3,756	356	.....	.....	.....	.....	.....	1,024	1,388	293	446
Norway	480	66	.....	1,405	1,923	4,631	11,777	7,489	1,680	1,213	1,699	2,654
Poland and Danzig	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portugal	96	403	.....	.....	678	2,735	.....	.....	.....	.....	25	57
Rumania	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Russia in Europe	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spain	438	40	.....	6,559	60	164	745	485	.....	.....	669	299
Sweden	2,703	2,698	644	48	1,654	5,510	1,398	2,775	72	100	6,939	1,012
Switzerland	89	724	.....	.....	.....	.....	.....	.....	120	114	.....	.....
Turkey in Europe	.....	.....	.....	.....	.....	.....	81	80	96	192	.....	.....
United Kingdom	37,486	37,318	3,673	61,511	6,431	24,160	1,715	3,468	62,473	49,536	1,418	22,876
Yugoslavia, Albania, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
TOTALS, EUROPE	$60,401	$52,369	$9,034	$123,551	13,751	$46,354	19,628	$20,692	106,178	$82,939	$12,871	$41,080
NORTH AMERICA												
Canada	$9,797	$14,858	$7,379	$10,082	3,822	$9,788	248	$500	233	$182	$758	$24,621
British Honduras	36	16	.....	.....	.....	.....	.....	.....	217	278	.....	.....
Costa Rica	367	688	286	.....	.....	.....	138	69	18	17	2,136	345
Guatemala	1,036	1,676	272	.....	.....	.....	226	140	5,581	3,511	1,563	179
Honduras	491	928	43	.....	.....	.....	36	30	1,077	1,223	444	176
Nicaragua	286	535	180	.....	1	4	3	12	1,015	710	1,572	.....
Panama	35	5,902	214	.....	.....	.....	130	255	6,377	4,411	1,351	564
Salvador	162	652	149	69	.....	.....	418	268	.....	.....	7,091	28
Mexico	23,711	27,118	5,058	1,825	245	718	805	709	59,807	51,204	13,405	2,295
Miquelon and St. Pierre Is.	.....	.....	.....	.....	84	274	.....	.....	.....	.....	.....	.....
Newfoundland and Labrador	1,862	897	.....	.....	8,061	24,814	7,014	6,148	2,258	3,092	556	.....
Bermuda	.....	116	.....	.....	12	36	.....	.....	651	813	54	.....
Barbados	.....	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	53
Jamaica	198	237	50	.....	.....	.....	.....	.....	5,584	4,112	1,011	1,353
Trinidad and Tobago	.....	713	380	.....	.....	.....	50	59	330	289	406	.....
Other British West Indies	46	146	224	.....	.....	.....	102	130	1,876	1,899	117	174
Cuba	7,152	19,005	2,593	.....	120	266	6,640	4,069	110,746	60,868	4,918	4,118
Dominican Republic	144	1,940	331	.....	.....	.....	.....	.....	12,892	9,011	311	300
Dutch West Indies	.....	19	23	.....	.....	.....	.....	.....	12,487	7,996	223	.....
French West Indies	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haiti	.....	26	101	.....	.....	.....	478	73	3,681	3,144	379	.....
Virgin Islands of U. S.	.....	24	.....	.....	.....	.....	.....	.....	294	189	.....	.....
TOTALS, NORTH AMERICA	$45,323	$75,509	$17,283	$11,976	12,345	$35,900	16,288	$12,462	225,114	$152,949	$36,295	$34,206
SOUTH AMERICA												
Argentina	$9,131	$3,931	$2,545	.....	.....	.....	96	$91	29,419	$17,031	$3,870	$19,739
Bolivia	913	6	37	$39	190	$1,125	.....	.....	.....	.....	75	.....
Brazil	13,412	1,858	691	2,313	.....	.....	1,300	1,535	.....	.....	.....	1,297
Chile	20,745	8,270	1,118	.....	24	73	596	515	.....	.....	.....	2,890
Colombia	3,412	1,644	1,264	.....	.....	.....	474	407	7,796	4,926	8,665	1,822
Ecuador	.....	1,510	122	.....	.....	.....	.....	.....	1,029	697	109	.....
British Guiana	791	.....	55	.....	.....	.....	.....	.....	96	54	.....	.....
Dutch Guiana	74	.....	.....	.....	.....	.....	.....	.....	.....	.....	108	36
Paraguay	.....	221	.....	.....	.....	.....	.....	.....	.....	.....	.....	432
Peru	1,196	1,977	1,083	.....	186	765	.....	.....	109	67	440	85
Uruguay	2,706	416	142	.....	.....	.....	.....	.....	672	442	2,798	1,474
Venezuela	1,311	4,224	2,841	.....	.....	.....	.....	.....	848	564	2,935	.....
TOTALS, SOUTH AMERICA	$53,691	$24,057	$9,898	$2,352	400	$1,963	2,466	$2,548	39,969	$23,781	$19,000	$28,012
ASIA												
Aden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British India	$9,223	$2,265	$857	.....	.....	.....	950	$1,443	2,154	$1,615	.....	$450
Ceylon	233	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,665
Straits Settlements	15	3,113	633	.....	.....	.....	.....	.....	2,268	1,561	.....	1,178
China	1,755	1,371	.....	.....	.....	.....	6,275	5,026	1,738	2,451	$212	3,079
Chosen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Java and Madura	9,026	1,049	1,866	.....	.....	.....	.....	.....	950	1,640	.....	4,453
French Indo-China	.....	.....	.....	.....	.....	.....	.....	.....	120	127	.....	.....
Other Dutch East Indies	1,412	207	150	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hejaz, Arabia, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hongkong	.....	64	.....	.....	.....	.....	.....	.....	739	656	19	355
Japan	1,522	11,285	8,555	$9,397	.....	.....	48	50	48	97	.....	2,045
Kwantung, leased territory	.....	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Palestine and Syria	168	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	578
Persia	.....	.....	225	.....	.....	.....	.....	.....	.....	.....	.....	.....
Philippine Islands	9,460	5,730	5,506	.....	636	$1,983	3,521	2,655	22,185	17,331	5,037	1,295
Siam	.....	.....	.....	.....	.....	.....	.....	.....	144	84	.....	.....
Turkey in Asia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
TOTALS, ASIA	$32,814	$25,114	$17,522	$9,397	636	$1,983	10,794	$9,174	30,346	$25,562	$5,268	$15,098
OCEANIA												
Australia	$12,523	$9,630	$3,594	.....	768	$1,871	1,268	$635	881	$1,710	.....	$15,086
British Oceania	.....	.....	.....	.....	.....	.....	.....	.....	690	577	.....	.....
French Oceania	60	58	186	.....	.....	.....	.....	.....	288	267	$36	.....
New Zealand	180	275	638	.....	1,840	6,268	19	26	5	5	211	2,424
Other Oceania	.....	.....	.....	.....	.....	.....	.....	.....	120	159	.....	.....
TOTALS, OCEANIA	$12,763	$9,963	$4,418	.....	2,608	$8,139	1,287	$661	1,984	$2,718	$247	$17,510

United States by Countries During April, 1925

Waterproofed Outer Garments Value	Pneumatic Casings: Automobile Number	Pneumatic Casings: Automobile Value	Pneumatic Casings: Others Value	Pneumatic Tubes: Automobile Value	Pneumatic Tubes: Others Value	Solid Tires: Automobile and Motor Truck Number	Solid Tires: Automobile and Motor Truck Value	Solid Tires: Others Value	Tire Rubber Accessories, Repair Materials Value	Hard Rubber Goods: Electrical Supplies Value	Hard Rubber Goods: Others Value	Rubber Water Bottles and Fountain Syringes Value	Other Druggists' Rubber Sundries Value	Bathing Caps Value	Rubber Toys, Balls and Balloons Value
.....	195	$1,426	.....	$29	.....	20	$619	.....	$87	.....	$541	$142	$60	.....	$367
.....	4	48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1,125	18,352	.....	1,483	.....	2	175	.....	303	.....	.....	284	1,065	$1,596	2,159
.....	10	222	.....	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	67	2,387	$322	718	$59	69	1,989	.....	.....	.....	32	.....	.....	.....	.....
.....	4,519	43,850	.....	4,969	409	126	4,132	.....	3,254	$274	.....	.....	450	1,392	3,747
.....	569	11,125	159	1,854	18	.....	.....	.....	1,960	.....	.....	.....	.....	.....	.....
.....	543	10,397	.....	946	.....	10	156	.....	4,246	908	5,889	219	522	1,667	374
.....	413	6,120	346	896	68	.....	.....	.....	1,031	.....	.....	27	313	2,324	20,551
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
.....	644	9,694	.....	2,251	.....	84	2,013	.....	765	.....	.....	.....	.....	.....	91
.....	178	1,873	.....	432	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	69	690	.....	198	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1,168	13,627	850	3,172	152	46	1,029	.....	574	.....	.....	9	538	186	871
.....	120	1,763	.....	479	.....	.....	.....	.....	86	.....	.....	.....	.....	.....	.....
$100	43	427	.....	53	.....	.....	.....	.....	15	.....	.....	.....	.....	.....	.....
.....	1,416	14,996	2,142	1,780	182	2	95	$245	2,187	.....	24	.....	339	2,320	12,644
.....	2,012	27,635	883	1,631	7	34	1,437	.....	514	150	.....	.....	50	904	619
.....	634	9,451	.....	1,660	.....	60	1,768	.....	725	.....	.....	.....	.....	.....	465
.....	654	6,881	.....	1,424	.....	.....	.....	.....	258	.....	.....	51	47	38	108
.....	95	1,428	.....	111	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	2,152	17,124	.....	4,473	.....	613	16,362	.....	.....	.....	.....	.....	.....	.....	.....
.....	1,799	27,761	.....	2,853	.....	69	3,448	.....	416	242	5	512	270	1,173	261
.....	4,712	70,307	.....	3,345	.....	151	7,342	.....	1,582	.....	.....	.....	980	3,380	1,730
.....	470	9,007	62	1,238	.....	6	101	.....	281	.....	533	.....	684	176	96
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	69	.....
543	13,096	145,737	1,815	13,086	112	3,250	74,244	.....	12,677	1,987	14,440	866	17,259	25,500	59,523
.....	29	433	.....	146	.....	.....	.....	.....	130	.....	.....	.....	.....	.....	.....
$643	36,836	$452,761	$6,579	$49,271	$1,007	4,542	$114,910	$245	$31,091	$3,561	$21,464	$2,110	$22,577	$40,725	$103,632
$1,852	1,947	$37,603	$1,140	$5,654	$113	160	$3,825	$912	$25,662	$19,488	$17,089	$91	$14,196	$4,962	* $15,890
53	21	208	154	149	.....	.....	.....	.....	2	.....	91	.....	34	.....	1
1,680	95	2,781	219	379	16	.....	.....	.....	48	.....	.....	22	278	.....	101
2,511	147	2,484	153	682	9	.....	.....	423	13	.....	16	.....	33	.....	396
321	112	2,192	120	458	18	26	1,170	.....	44	.....	27	.....	34	22	71
16	102	1,496	.....	284	.....	.....	.....	.....	65	.....	14	43	175	.....	282
393	3,250	37,872	480	2,094	874	55	1,777	48	401	11	46	.....	614	95	204
610	112	1,899	.....	252	.....	8	242	.....	9	.....	.....	.....	.....	28	137
38,154	9,341	91,712	1,592	17,138	85	120	2,391	837	4,466	1,624	1,956	931	3,677	219	8,444
1,808	.....	.....	.....	.....	.....	.....	.....	93	.....	.....	.....	.....	.....	.....	.....
8,416	273	3,117	12	699	.....	14	454	476	141	.....	96	16	92	.....	254
57	.....	.....	.....	.....	.....	6	96	10	.....	40	.....	.....	92	.....	42
.....	83	782	.....	210	.....	42	795	272	36	.....	.....	61	.....	.....	.....
.....	81	1,225	.....	144	.....	.....	.....	.....	53	.....	.....	20	53	101	.....
.....	222	3,047	31	258	.....	.....	.....	.....	.....	.....	.....	.....	14	47	.....
.....	165	2,309	.....	1,292	.....	3	53	77	42	.....	.....	.....	.....	.....	.....
26,766	7,964	96,334	1,186	15,085	581	1,632	39,740	71	1,701	525	4,744	1,127	6,262	1,011	3,064
8,559	697	7,055	279	1,127	56	52	1,796	41	20	.....	.....	18	396	6	25
776	519	5,572	.....	1,401	.....	.....	.....	.....	47	.....	.....	.....	13	.....	.....
.....	335	3,163	.....	216	.....	18	300	.....	.....	.....	.....	.....	.....	.....	.....
156	484	7,229	18	1,043	55	8	185	60	74	.....	.....	.....	.....	.....	50
.....	33	359	.....	88	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
$92,623	25,983	$308,439	$5,384	$48,653	$1,807	2,144	$52,824	$3,320	$32,823	$21,688	$24,079	$2,329	$25,963	$6,491	$28,961
$170	18,339	$173,098	.....	$23,391	.....	295	$10,482	$3,572	$10,693	$419	$98	$5,981	$4,606	.....	$378
849	136	2,953	.....	229	.....	2	37	66	28	.....	.....	99	36	.....	.....
1,165	9,010	82,939	.....	8,698	.....	42	826	.....	970	.....	60	1,354	1,552	$102	610
394	2,531	37,956	.....	2,996	$759	42	1,068	463	32	571	11	230	452	.....	51
1,259	1,573	22,072	$35	4,895	.....	34	1,276	664	291	.....	125	260	858	.....	328
.....	260	4,117	.....	463	.....	4	106	.....	.....	106	.....	173	75	.....	436
85	.....	.....	.....	54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	37	428	.....	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	422
850	1,941	28,955	.....	5,203	.....	23	1,003	.....	508	.....	665	.....	17	.....	641
2,616	2,391	28,464	.....	1,630	.....	.....	.....	.....	1,926	14	.....	346	613	.....	149
969	2,753	40,124	198	7,929	12	.....	.....	26	452	245	.....	676	465	.....	359
$8,357	39,021	$421,106	$233	$55,504	$771	442	$14,798	$4,725	$14,900	$1,355	$959	$9,119	$8,674	$102	$3,374
.....	221	$1,828	.....	$225	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
$744	1,458	18,734	$285	1,179	.....	242	$6,283	$1,507	$198	.....	.....	$295	$566	$55	$1,614
.....	430	7,372	.....	736	.....	.....	.....	756	.....	.....	.....	.....	118	.....	.....
.....	1,934	17,623	318	797	$47	194	4,205	.....	.....	.....	$123	.....	44	.....	.....
.....	535	7,402	.....	1,060	.....	27	396	.....	249	$205	90	194	729	455	427
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14	.....	.....	.....
.....	2,110	23,893	.....	1,586	.....	221	5,789	4,167	367	.....	.....	30	83	71	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	62	.....	.....	.....	.....	.....	.....
.....	65	1,351	.....	168	.....	.....	.....	1,392	38	.....	.....	.....	.....	.....	.....
.....	130	936	.....	208	.....	.....	.....	.....	129	.....	.....	.....	.....	.....	468
.....	336	4,705	.....	824	.....	.....	.....	.....	121	.....	.....	.....	87	.....	.....
.....	7,630	67,368	.....	7,147	.....	238	3,815	.....	422	.....	.....	24	3,266	3,545	.....
.....	4	30	.....	32	.....	.....	.....	.....	14	.....	.....	.....	.....	.....	.....
.....	338	4,881	725	1,133	181	.....	.....	.....	1,430	.....	.....	.....	557	72	650
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36,008	3,982	46,434	474	11,544	322	365	7,603	6,661	2,083	.....	195	846	1,192	.....	81
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	301
$36,752	19,173	$202,557	$1,802	$26,639	$550	1,287	$28,091	$14,483	$5,113	$205	$406	$1,403	$6,678	$4,198	$3,541
$118	7,165	$128,784	$1,152	$12,414	$90	1,394	$43,854	$817	$14,903	$2,630	$11,147	$224	$4,376	$61	$2,256
.....	10	96	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	15	202	.....	181	.....	12	400	.....	107	32	.....	.....	.....	.....	.....
93	7,509	91,064	.....	9,816	.....	683	29,479	.....	3,490	102	245	96	965	664	394
.....	21	275	.....	23	14	.....	.....	.....	19	.....	.....	.....	.....	.....	.....
$211	14,720	$220,421	$1,152	$22,434	$104	2,089	$73,733	$817	$18,509	$2,764	$11,392	$320	$5,341	$725	$2,650

Exports of India Rubber Manufactures from the United

	Belting Value	Hose Value	Packing Value	Thread Value	Boots Pairs	Boots Value	Shoes Pairs	Shoes Value	Canvas Shoes with Rubber Soles Pairs	Canvas Shoes with Rubber Soles Value	Soles and Heels Value	Waterproofed Auto Cloth and Kubberized Fabrics Value
AFRICA												
Belgian Kongo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British West Africa	$93	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$72
British South Africa	12,583	$12,594	$1,571	.....	324	$1,368	250	$206	1,763	$1,054	$2,995	700
British East Africa	.....	62	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Canary Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	121	.....
Egypt	.....	94	.....	.....	.....	.....	.....	.....	.....	.....	71	190
Algeria and Tunis	.....	1,759	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other French Africa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Liberia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morocco	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portuguese East Africa	1,209	.....	1,591	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other Portuguese Africa	.....	49	182	.....	.....	.....	.....	.....	.....	.....	.....	36
Spanish Africa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
TOTALS, AFRICA	$13,885	$14,558	$3,344	.....	324	$1,368	250	$206	1,763	$1,054	$3,187	$998
GRAND TOTAL	$218,877	$201,570	$61,499	$147,276	30,064	$95,707	50,713	$45,743	405,354	$289,003	$76,868	$136,904

Official India Rubber Statistics for the United States

Imports of Crude and Manufactured Rubber

	April, 1925 Pounds	April, 1925 Value	Ten Months Ended April, 1925 Pounds	Ten Months Ended April, 1925 Value
UNMANUFACTURED—*free*				
Crude rubber	72,813,316	$24,874,562	647,833,220	$177,693,188
Balata	71,016	27,441	798,374	411,622
Jelutong or Pontianak	1,482,095	172,249	11,857,054	1,116,862
Gutta percha	132,175	17,939	2,105,841	338,387
Guayule	578,000	104,302	3,788,358	671,040
Rubber scrap	1,178,297	43,883	10,968,806	397,795
Totals	76,254,899	$25,240,376	677,351,653	$180,628,894
Chicle *dutiable*	1,203,667	$505,205	8,550,339	$4,183,849
MANUFACTURED—*dutiable*				
Rubber belting	77,822	53,724	573,864	403,121
Other rubber manufactures of substitutes for rubber	.....	66,898	.....	942,773
Totals	77,822	$120,622	573,864	$1,345,894

Exports of Foreign Merchandise

UNMANUFACTURED				
Crude rubber	2,532,262	$1,009,305	21,235,741	$7,018,003
Balata	23,588	16,321	572,680	375,112
Jelutong or Pontianak	.....	.....	.....	.....
Gutta percha and rubber substitutes and scrap	51,520	1,494	100,013	8,034
Totals	2,607,370	$1,027,120	21,908,434	$7,401,149
Chicle	.....	.....	148,890	$65,635
MANUFACTURED				
Gutta percha and India rubber	20,551	$14,383	194,860	$80,410
Totals	20,551	$14,383	194,860	$80,410

Exports of Domestic Merchandise

MANUFACTURED				
India rubber				
Reclaimed	812,502	$79,093	5,128,493	$490,495
Scrap and old	2,918,480	116,787	22,564,036	926,764
Footwear				
Boots *pairs*	30,064	95,707	754,203	1,749,655
Shoes *pairs*	50,713	45,743	1,482,275	1,211,662
Canvas shoes with rubber soles *pairs*	405,354	289,003	3,688,076	2,649,045
Rubber water bottles and fountain syringes *number*	21,498	15,957	261,779	187,842
Other druggists' rubber sundries	66,264	70,348	630,885	730,356
Bathing caps *dozen*	32,194	54,111	133,677	234,851
Hard rubber goods				
Electric hard rubber goods	99,733	29,573	481,906	201,163
Other hard rubber goods	85,469	58,357	568,886	584,184

	April, 1925 Pounds	April, 1925 Value	Ten Months Ended April, 1925 Pounds	Ten Months Ended April, 1925 Value
Tires				
Pneumatic casings				
For automobiles *number*	142,950	$1,676,092	1,152,413	$13,692,956
Others *number*	3,976	15,150	40,745	146,505
Pneumatic tubes				
For automobiles *number*	125,204	207,323	1,015,677	1,800,900
Others	4,925	4,239	41,971	36,924
Solid tires				
For automobiles and motor trucks *number*	10,715	290,915	81,795	2,117,325
Others *number*	109,126	23,590	792,737	193,856
Tire accessories	256,740	105,058	1,427,282	572,570
Belting	378,729	218,877	3,001,098	1,710,184
Hose	539,875	201,570	3,650,507	1,399,881
Packing	137,210	61,499	1,487,341	675,547
Soles and heels	239,392	76,868	2,265,990	731,586
Thread	132,709	147,276	1,115,167	1,299,873
Other rubber manufactures	545,488	271,409	3,992,785	2,228,155
Totals	.....	$4,154,545	.....	$35,572,279

Imports of Crude Rubber and Rubber Latex

	April 1924	April 1925	Four Months Ended April 1924	Four Months Ended April 1925
Long tons	37,886	32,506	112,040	123,215

Imports of Crude Rubber Into the United States by Customs Districts

	April, 1924 Pounds	April, 1924 Value	April, 1925 Pounds	April, 1925 Value
Massachusetts	2,027,059	$476,788	1,796,593	$655,715
New York	80,921,601	19,578,489	66,274,713	22,562,142
Philadelphia	.....	.....	1,830,105	643,477
Maryland	660,800	153,558	1,269,794	438,020
Los Angeles	1,154,222	266,442	1,455,559	512,297
Oregon	33,600	8,612	56,000	17,567
San Francisco	11,200	2,983	130,552	45,344
Colorado	.....	.....	.....	.....
Washington	.....	.....	.....	.....
Chicago	56,716	13,215	.....	.....
San Antonio	177,783	31,734	.....	.....
Totals	85,042,981	$20,531,821	72,813,316	$24,874,562

United States Crude and Waste Rubber Imports for 1925 (By Months)

	Plantations	Parás	Africans	Centrals	Guayule	Manicoba and Matto Grosso	Total 1925	Total 1924	Balata	Miscellaneous	Waste
January *tons*	28,480	989	325	54	112	..	29,960	21,611	22	1,462	206
February	21,740	1,203	120	224	163	6	23,456	31,763	48	908	241
March	31,067	1,906	287	305	346	3	33,914	17,752	25	1,022	186
April	25,403	1,167	332	78	244	7	27,231	42,436	38	987	243
May	34,187	1,834	287	203	364	14	36,889	23,914	30	816	182
Totals, 5 months, 1925 *tons*	140,877	7,099	1,351	864	1,229	30	151,450	.....	163	5,195	1,058
Totals, 5 month, 1924	130,501	5,074	1,245	249	416	..	.....	137,476	266	2,656	550

Compiled from statistics supplied by the Rubber Association of America, Inc.

States by Countries During April, 1925 *(Continued)*

Waterproofed Outer Garments Value	Pneumatic Casings: Automobile Number	Pneumatic Casings: Automobile Value	Pneumatic Casings: Others Value	Pneumatic Tubes: Automobile Value	Pneumatic Tubes: Others Value	Solid Tires: Automobile and Motor Truck Number	Solid Tires: Automobile and Motor Truck Value	Solid Tires: Others Value	Tire Rubber Accessories, Repair Materials Value	Hard Rubber Goods: Electrical Supplies Value	Hard Rubber Goods: Others Value	Rubber Water Bottles and Fountain Syringes Value	Other Druggists' Rubber Sundries Value	Bathing Caps Value	Rubber Toys, Balls and Balloons Value
.....	6	$200	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	109	1,301	.....	$14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$33
$1,973	6,098	58,869	.....	3,178	.....	141	$3,497	.....	$2,476	.....	$55	$596	$878	$1,643	1,475
.....	46	686	.....	213	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	160	2,008	.....	248	.....	42	2,302	.....	.....	.....	.....	.....	.....	.....	.....
.....	583	4,902	.....	641	.....	20	566	.....	146	.....	.....	80	237	227	384
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	44	410	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	32	436	.....	89	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	26	213	.....	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	20	711	.....	244	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	93	1,072	.....	167	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	8	194	.....	.....	.....	.....	.....	.....	.....	.....
$1,973	7,217	$70,808	.....	$4,822	.....	211	$6,559	.....	$2,622	.....	$55	$676	$1,115	$1,870	$1,892
$140,564	142,950	$1,676,092	$15,150	$207,323	$4,239	10,715	$290,915	$23,590	$105,038	$29,573	$58,357	$15,957	$70,348	$54,111	$144,050

United Kingdom Rubber Statistics

Imports

UNMANUFACTURED	April, 1925 Pounds	April, 1925 Value	Four Months Ended April, 1925 January-April, 1925 Pounds	Four Months Ended April, 1925 January-April, 1925 Value
Crude rubber				
From—				
Straits Settlements	3,984,400	£280,548	18,910,300	£1,302,345
Federated Malay States	1,790,200	127,510	8,213,700	560,748
British India	870,500	64,784	4,481,000	304,378
Ceylon and Dependencies	1,391,100	94,692	7,093,200	477,805
Other Dutch Possessions in Indian Seas	1,181,600	78,143	3,159,000	221,709
Dutch East Indies (except other Dutch possessions Indian Seas)	1,177,200	80,872	5,349,600	358,025
Other countries in East Indies and Pacific, not elsewhere specified	136,800	10,016	590,400	45,441
Brazil	1,137,500	73,809	3,996,000	269,796
West Africa				
French West Africa	129,000	7,365	869,000	46,470
Gold Coast	6,900	520	28,600	1,798
Other parts of West Africa	98,700	7,984	486,400	31,023
East Africa, including Madagascar	43,500	3,198	257,800	18,370
Other countries	52,600	4,165	197,700	13,900
Totals	12,000,000	£833,606	53,632,700	£3,651,808
Waste and reclaimed rubber	661,400	5,996	1,934,000	20,522
Gutta percha and balata	981,600	136,771	4,297,800	583,435
Rubber substitutes	2,200	70	25,700	901
Totals	13,645,200	£976,443	59,890,200	£4,256,666
MANUFACTURED				
Boots and shoes....*doz. pairs*	36,720	£71,264	120,056	£271,114
Tires and tubes				
Pneumatic				
Outer covers	.....	388,293	.....	976,079
Inner tubes	.....	41,347	.....	122,954
Solid tires	.....	38,563	.....	116,399
Other rubber manufactures	.....	164,806	.....	569,926
Totals	.....	£704,273	.....	£2,056,472

Exports

UNMANUFACTURED				
Waste and reclaimed	881,900	£12,265	4,296,900	£51,511
Rubber substitutes	36,100	739	393,100	9,488
Totals	918,000	£13,004	4,690,000	£60,999
MANUFACTURED				
Boots and shoes....*doz pairs*	24,580	£39,972	101,423	£153,369
Tires and tubes				
Pneumatic				
Outer covers	.....	233,075	.....	922,129
Inner tubes	.....	53,150	.....	193,557
Solid tires	.....	36,037	.....	137,447
Other rubber manufactures	.....	250,831	.....	1,019,390
Totals	.....	£613,065	.....	£2,425,892

Exports—Colonial and Foreign

UNMANUFACTURED	April, 1925 Pounds	April, 1925 Value	Four Months Ended April, 1925 January-April, 1925 Pounds	Four Months Ended April, 1925 January-April, 1925 Value
Crude rubber				
To—				
Russia	1,197,600	£105,758	6,608,000	£508,970
Sweden, Norway and Denmark	114,600	8,538	860,500	64,665
Germany	2,100,300	160,564	8,652,200	619,357
Belgium	336,200	26,117	2,025,300	156,424
France	3,738,600	316,712	14,294,300	1,124,372
Spain	26,300	2,283	282,600	21,622
Italy	825,700	67,975	5,485,400	420,813
Austria	.....	.....	104,200	8,502
Hungary	.....	.....	7,600	585
Other European countries	293,500	25,387	1,132,400	82,996
United States	9,305,200	747,226	31,411,100	2,393,348
Canada	625,000	48,519	2,769,700	206,889
Other countries	69,000	5,378	456,400	34,948
Totals	18,632,000	£1,514,457	74,089,700	£5,643,491
Waste and reclaimed rubber	27,900	905	59,000	1,709
Gutta percha and balata	19,900	1,631	441,400	31,575
Rubber substitutes	.....	.....	55,200	2,659
Totals	18,679,800	£1,516,993	74,645,300	£5,679,434
MANUFACTURED				
Boots and shoes...*doz. pairs*	583	£1,639	1,310	£4,049
Tires and tubes				
Pneumatic				
Outer covers	.....	25,221	.....	103,027
Inner tubes	.....	3,274	.....	13,991
Solid tires	.....	1,249	.....	5,500
Other rubber manufactures	.....	8,381	.....	66,881
Totals	.....	£39,764	.....	£193,448

Landings, Deliveries and Stocks in London and Liverpool as returned by the Warehouses and Wharves during the month of April, 1925

	Landed for April Tons	Delivered for April Tons	Stocks April 30 1925 Tons	Stocks April 30 1924 Tons	Stocks April 30 1923 Tons
LONDON:					
Plantation	4,439	9,609	12,788	54,252	58,396
Other grades	....	5	55	107	100
LIVERPOOL:					
Plantation	†214	†844	†1,075	†5,081	†6,165
Pará and Peruvian	370	286	217	790	319
Other grades	....	6	29	210	237
Total tons, London and Liverpool	5,023	10,750	14,164	60,440	65,217

†Official returns from the six recognized public warehouses.

EMPLOYMENT FIGURES COMPILED BY THE DEPARTMENT OF LABOR and with 100 representing the monthly average for 1923 show that the index of employment in the manufacture of automobile tires has risen from 95.3 for April, 1924, to 107.9 for March, 1925, and 110.3 for April, 1925.

Crude Rubber Arrivals at New York as Reported by Importers

Parás and Caucho

	Fine Cases	Medium Cases	Coarse Cases	Caucho Cases	Cametá Cases
MAY 24. By "Carmania," London.					
Meyer & Brown, Inc.	448	....	....	....	....
MAY 25. By "Western World," South America.					
Paul Bertuch & Co.	†219	....	....	....	....
MAY 30. By "Aidan," South America.					
H. A. Astlett & Co.	315	6	126	64	....
Paul Bertuch & Co.	39	1	1	453	....
Paul Bertuch & Co.	...	....	**104	**222	....
General Rubber Co.	118	11	15	117	....
L. Littlejohn & Co., Inc.	310	5	343	1,176	....
Meyer & Brown, Inc.	430	....	63	907	....
Poel & Kelly, Inc.	198	4	220	1,504	....
Ultramares Corporation	2	....	....	134	....
JUNE 4. By "Cuthbert," South America.					
H. A. Astlett & Co.	318	....	66	5	....
Paul Bertuch & Co.	30	....	....	....	....
General Rubber Co.	22	1	14	28	....
Meyer & Brown, Inc.	**314	....	....	....	....
Poel & Kelly, Inc.	83	14	22	18	....
JUNE 11. By "Bruyere," South America.					
General Rubber Co.	...	....	....	49	....

†Biscuits. **Packages.

Plantations

	Cases
MAY 18. By "Minnewaska," London.	
H. A. Astlett & Co.	1,121
Baird Rubber & Trading Co., Inc.	1,164
General Rubber Co.	2,661
J. T. Johnstone & Co., Inc.	1,188
L. Littlejohn & Co., Inc.	5,839
Meyer & Brown, Inc.	457
H. Muehlstein & Co., Inc.	1,730
Vernon Metal & Produce Co., Inc.	960
Chas. T. Wilson Co., Inc.	386
MAY 19. By "American Shipper," London.	
Baird Rubber & Trading Co., Inc.	305
MAY 19. By "Scythia," Liverpool.	
Baird Rubber & Trading Co., Inc.	1,175
L. Littlejohn & Co., Inc.	*164
MAY 20. By "Jalapa," Far East.	
L. Littlejohn & Co., Inc.	552
Vernon Metal & Produce Co., Inc.	56
MAY 21. By "Barbadian," England.	
L. Littlejohn & Co., Inc.	8
MAY 21. By "Lorenzo," Far East.	
H. Muehlstein & Co., Inc.	468
Poel & Kelly, Inc.	*100
MAY 22. By "Birmingham City," Singapore.	
Chas. T. Wilson & Co., Inc.	56
MAY 22. By "Gaelic Prince," Straits Settlements.	
H. A. Astlett & Co.	1,771
Baird Rubber & Trading Co., Inc.	1,756
Baird Rubber & Trading Co., Inc.	*144
Paul Bertuch & Co.	70
Paul Bertuch & Co. ....bales	75
General Rubber Co.	2,634
Hood Rubber Co.	105
Hood Rubber Co.	*554
J. T. Johnstone & Co., Inc.	150
L. Littlejohn & Co., Inc.	7,527
Meyer & Brown, Inc.	3,333
H. Muehlstein & Co., Inc.	1,561
H. Muehlstein & Co., Inc.	*694
Poel & Kelly, Inc.	4,616
Vernon Metal & Produce Co., Inc.	562
Chas. T. Wilson Co., Inc.	547
MAY 22. By "Suffren," Havre.	
Poel & Kelly, Inc.	119
MAY 23. By "Stockwell," Far East.	
H. A. Astlett & Co.	112
Baird Rubber & Trading Co., Inc.	330
L. Littlejohn & Co., Inc.	*930
Meyer & Brown, Inc.	530
MAY 23. By "Virgilia," London.	
H. A. Astlett & Co.	178
L. Littlejohn & Co., Inc.	547
Poel & Kelly, Inc.	1,204
MAY 24. By "Carmania," England.	
Baird Rubber & Trading Co.	911
L. Littlejohn & Co., Inc.	80
Meyer & Brown, Inc.	50
Poel & Kelly, Inc.	50
Vernon Metal & Produce Co., Inc.	303
MAY 24. By "Ryndam," Amsterdam.	
Poel & Kelly, Inc.	72
MAY 25. By "American Trader," London.	
Baird Rubber & Trading Co., Inc.	1,438
L. Littlejohn & Co., Inc.	461
Meyer & Brown, Inc.	20
MAY 25. By "Bordeaux Maru," Far East.	
H. A. Astlett & Co.	71
Baird Rubber & Trading Co., Inc.	400
General Rubber Co.	113
L. Littlejohn & Co., Inc.	1,725
Meyer & Brown, Inc.	507
Poel & Kelly, Inc.	1,333
Vernon Metal & Produce Co., Inc.	75
Chas. T. Wilson Co., Inc.	553
MAY 25. By "Minnekahda," London.	
H. A. Astlett & Co.	392
Baird Rubber & Trading Co., Inc.	3,068
General Rubber Co.	3,908
J. T. Johnstone & Co., Inc.	726
L. Littlejohn & Co., Inc.	5,378
Meyer & Brown, Inc.	798
Vernon Metal & Produce Co., Inc.	998
Chas. T. Wilson Co., Inc.	511
MAY 26. By "Anyo Maru," Far East.	
Meyer & Brown, Inc.	250
MAY 26. By "Cedric," Europe.	
H. A. Astlett & Co.	198
Baird Rubber & Trading Co., Inc.	1,568
L. Littlejohn & Co., Inc.	138
MAY 26. By "West Cajoot," Far East.	
H. A. Astlett & Co.	400
MAY 27. By "France," Havre.	
Adolph Hirsch & Co., Inc.	112
MAY 29. By "Rotterdam," Holland.	
Meyer & Brown, Inc.	50
MAY 31. By "Clan MacNeil," Far East.	
General Rubber Co.	217
L. Littlejohn & Co., Inc.	212
MAY 31. By "Robert Dollar," Far East.	
Poel & Kelly, Inc.	300
JUNE 1. By "Hartfield," Singapore.	
L. Littlejohn & Co., Inc.	52
Poel & Kelly, Inc.	88
Chas. T. Wilson Co., Inc.	157
JUNE 1. By "Kasenga," Far East.	
H. A. Astlett & Co.	*1,403
Baird Rubber & Trading Co., Inc.	956
Baird Rubber & Trading Co., Inc.	*50
Paul Bertuch & Co.	75
Paul Bertuch & Co. ....bales	94
The Fisk Rubber Co.	238
General Rubber Co.	1,477
Hood Rubber Co.	*268
J. T. Johnstone & Co., Inc.	675
L. Littlejohn & Co., Inc.	4,842
Meyer & Brown, Inc.	3,096
H. Muehlstein & Co., Inc.	265
Poel & Kelly, Inc.	2,973
Vernon Metal & Produce Co., Inc.	100
Chas. T. Wilson & Co., Inc.	360
JUNE 1. By "Minnetonka," London.	
General Rubber Co.	604
L. Littlejohn & Co., Inc.	1,051
H. Muehlstein & Co., Inc.	636
JUNE 1. By "President Monroe," Far East.	
H. Muehlstein & Co., Inc.	310
H. Muehlstein & Co., Inc.	*132
Poel & Kelly, Inc.	224
JUNE 1. By "Sac City," Amsterdam.	
Baird Rubber & Trading Co., Inc.	*97
JUNE 1. By "Verentia," London.	
H. A. Astlett & Co.	798
Poel & Kelly, Inc.	84
JUNE 2. By "Samaria," Liverpool.	
Baird Rubber & Trading Co, Inc.	1,250
JUNE 2. By "Tydeus," Far East.	
Hood Rubber Co.	*788
Poel & Kelly, Inc.	*400
JUNE 4. By "Lapland," London.	
Chas. T. Wilson Co., Inc.	12
JUNE 4. By "Minnetonka," Europe.	
H. A. Astlett & Co.	130
JUNE 4. By "Robert Dollar," Straits Settlements.	
Paul Bertuch & Co.	200
General Rubber Co.	201
J. T. Johnstone & Co., Inc.	112
L. Littlejohn & Co., Inc.	1,929
Meyer & Brown, Inc.	1,064
Poel & Kelly, Inc.	469
Vernon Metal & Produce Co., Inc.	50
Chas. T. Wilson Co., Inc.	103
JUNE 5. By "President Monroe," Straits Settlements.	
H. A. Astlett & Co.	50
Baird Rubber & Trading Co., Inc.	100
Paul Bertuch & Co.	267
The Fisk Rubber Co.	1,777
General Rubber Co.	242
Hood Rubber Co.	*132
L. Littlejohn & Co., Inc.	1,929
Meyer & Brown, Inc.	530
Poel & Kelly, Inc.	267
Chas. T. Wilson Co., Inc.	191
JUNE 5. By "Sebring City," Far East.	
Poel & Kelly, Inc.	200
JUNE 5. By "Veendyk," Far East.	
Baird Rubber & Trading Co., Inc.	203
Baird Rubber & Trading Co., Inc.	*669
Baird Rubber & Trading Co., Inc., Penang Scrap....tons	*100
Hood Rubber Co.	*255
Meyer & Brown, Inc.	1,263
JUNE 6. By "Kasenga," Far East.	
Poel & Kelly, Inc.	*1,306
JUNE 6. By "Siberia Maru," Far East.	
H. A. Astlett & Co.	209
JUNE 6. By "Tydeus," Far East.	
H. A. Astlett & Co.	1,580
General Rubber Co.	1,840
Hood Rubber Co.	*788
L. Littlejohn & Co., Inc.	5,353
Meyer & Brown, Inc.	2,563
H. Muehlstein & Co., Inc.	922
H. Muehlstein & Co., Inc.	*132
Poel & Kelly, Inc.	2,346
Vernon Metal & Produce Co., Inc.	593
Chas. T. Wilson Co., Inc.	1,665
JUNE 7. By "London Exchange," England.	
L. Littlejohn & Co., Inc.	776
JUNE 7. By "Veendam," London.	
L. Littlejohn & Co., Inc.	5,110
H. Muehlstein & Co., Inc.	50
JUNE 8. By "Caronia," Liverpool.	
Baird Rubber & Trading Co., Inc.	435
L. Littlejohn & Co., Inc.	40
JUNE 8. By "City of Auckland," Far East.	
H. A. Astlett & Co.	56
Baird Rubber & Trading Co., Inc.	400
JUNE 8. By "Novian," England.	
L. Littlejohn & Co., Inc.	56
JUNE 8. By "Poleric," Far East.	
L. Littlejohn & Co., Inc.	1,698
Meyer & Brown, Inc.	910
Poel & Kelly, Inc.	212
JUNE 8. By "Selma City," Singapore.	
H. A. Astlett & Co.	50
Baird Rubber & Trading Co., Inc.	50
General Rubber Co.	4,022
Hood Rubber Co.	*274
J. T. Johnstone Co., Inc.	50
L. Littlejohn & Co., Inc.	3,485
Meyer & Brown, Inc.	1,646
H. Muehlstein & Co., Inc.	200
Poel & Kelly, Inc.	578
Vernon Metal & Produce Co., Inc.	160
Chas. T. Wilson Co., Inc.	344
JUNE 8. By "Tydeus," Straits Settlements.	
Baird Rubber & Trading Co., Inc.	984
Baird Rubber & Trading Co., Inc.	*96
The Fisk Rubber Co.	244
J. T. Johnstone & Co., Inc.	170
JUNE 8. By "Veendyk," Far East.	
H. A. Astlett & Co.	*680
General Rubber Co.	4,950
J. T. Johnstone & Co., Inc.	51
H. Muehlstein & Co., Inc.	321
H. Muehlstein & Co., Inc.	*153
Poel & Kelly, Inc.	871
JUNE 9. By "Bankdale," France.	
Poel & Kelly, Inc.	84
JUNE 9. By "Vellavia," London.	
Poel & Kelly, Inc.	413
JUNE 10. By "Albania," Far East.	
Poel & Kelly, Inc.	255
JUNE 10. By "American Farmer," London.	
General Rubber Co.	134
J. T. Johnstone & Co., Inc.	94
L. Littlejohn & Co., Inc.	1,611
Meyer & Brown, Inc.	50
Poel & Kelly, Inc.	50
JUNE 12. By "City of Auckland," Far East.	
General Rubber Co.	748
L. Littlejohn & Co., Inc.	1,274
Meyer & Brown, Inc.	2,595
Poel & Kelly, Inc.	224

*Arrived at Boston.

JUNE 12. By "Silverelm," Singapore. CASES
H. A. Astlett & Co. 71
Baird Rubber & Trading Co., Inc. 50
Baird Rubber & Trading Co., Inc. *50
The Fisk Rubber Co. 373
General Rubber Co. 3,047
Hood Rubber Co. *322
F. T. Johnstone & Co., Inc. 50
L. Littlejohn & Co., Inc. 2,758
H. Muehlstein & Co., Inc. 197
Poel & Kelly, Inc. 82
Chas. T. Wilson Co., Inc. 2,758
JUNE 14. By "Minnewaska," England.
L. Littlejohn & Co., Inc. 1,719
Meyer & Brown, Inc. 15
JUNE 15. By "Laconia," Liverpool.
General Rubber Co. 373
JUNE 18. By "President Harrison," Singapore.
The Fisk Rubber Co. 512
Meyer & Brown, Inc. 550
JUNE 18. By "Rhesus," Singapore.
The Fisk Rubber Co. 144

Manicobas

JUNE 10. By "West Lashaway," South America.
Adolph Hirsch & Co., Inc. ..... 58 bales

*Arrived at Boston.

Rubber Latex

LBS.
MAY 22. By "Barbadian," Europe.
Poel & Kelly, Inc. ..... gallons 2,500
JUNE 6. By "Selma City," Far East.
General Rubber Co. 195,626
JUNE 11. By "Silverelm," Far East.
General Rubber Co. 314,598

Africans

CASES
MAY 24. By "Carmania," England.
L. Littlejohn & Co., Inc. 192
MAY 27. By "Jufuku Maru," Germany.
L. Littlejohn & Co., Inc. 100
MAY 30. By "Zeeland," Belgium.
L. Littlejohn & Co., Inc. 93
JUNE 5. By "Veendyk," Singapore.
Hood Rubber Co. *41
JUNE 8. By "Karachi Maru," Germany.
L. Littlejohn & Co., Inc. 84
JUNE 15. By "Laconia," England.
L. Littlejohn & Co., Inc. 84

Centrals

MAY 29. By "Cristobal," South America.
Ultramares Corporation 86

Balata

MAY 22. By "Haiti," South America. CASES
Middleton & Co., Ltd. 37
JUNE 1. By "Maraval," South America.
Ultramares Corporation 192

Guayule

MAY 18. By "Railways," Mexico.
Continental Rubber Co. of New York 500
MAY 22. By "Railways," Mexico.
Continental Rubber Co. of New York 560
MAY 23. By "Railways," Mexico.
Continental Rubber Co. of New York 500
MAY 26. By "Agivistar," Mexico.
Continental Rubber Co. of New York 1,120
MAY 27. By "Railways," Mexico.
Continental Rubber Co. of New York 560
MAY 29. By "Railways," Mexico.
Continental Rubber Co. of New York 500
JUNE 5. By "Stal," Mexico.
Continental Rubber Co. of New York 560
JUNE 6. By "Railways," Mexico.
Continental Rubber Co. of New York 500
JUNE 8. By "Sheaf Water," Mexico.
Continental Rubber Co. of New York 560
JUNE 16. By "Railways," Mexico.
Continental Rubber Co. of New York 1,120

Rubber Statistics for the Dominion of Canada

Imports of Crude and Manufactured Rubber

	March, 1925		Twelve Months Ended March, 1925	
	Pounds	Value	Pounds	Value
UNMANUFACTURED				
Rubber, gutta percha, etc.,				
From United Kingdom	976,939	$335,728	5,587,553	$1,605,509
United States	3,589,208	1,356,993	26,226,540	7,508,145
Belgium	.....	.....	50,122	11,393
Straits Settlements	628,600	226,921	2,350,433	617,031
Dutch East Indies	67,087	25,439	145,561	45,294
France	.....	.....	26,649	5,766
Other countries	.....	.....	.....	.....
Totals	5,261,834	$1,945,081	34,386,858	$9,793,138
Rubber, recovered	554,476	$62,826	3,165,182	$336,918
Rubber, powdered and rubber or gutta percha scrap	411,822	18,672	4,321,501	170,439
Balata	58,698	23,051	64,005	27,118
Rubber substitutes	90,011	19,180	760,264	197,513
Totals	1,115,007	$123,729	8,310,952	$731,988
PARTLY MANUFACTURED				
Hard rubber sheets and rods	23,763	$10,608	193,308	$91,500
Hard rubber tubes	.....	1,146	.....	11,325
Rubber thread not covered	19,740	20,800	107,098	113,265
Totals	43,503	$32,554	300,406	$216,090
MANUFACTURED				
Belting	.....	$14,638	.....	$163,335
Hose	.....	17,652	.....	122,058
Packing	.....	5,906	.....	42,143
Boots and shoes.....*pairs*	6,859	9,284	161,898	171,535
Clothing, including waterproofed	.....	25,991	.....	180,498
Gloves	.....	1,874	.....	15,862
Hot water bottles	.....	522	.....	10,224
Tires, solid .....*number*	107	3,993	6,780	65,383
Tires, pneumatic.....*number*	2,614	33,529	49,418	550,146
Inner tubes .....*number*	1,738	3,500	27,648	64,670
Elastic, round or flat	.....	24,697	.....	239,960
Mats and matting	.....	3,709	.....	21,773
Cement	.....	3,335	.....	47,669
Other rubber manufactures	.....	200,204	.....	1,541,461
Totals	11,318	$348,834	245,744	$3,236,717
Totals, rubber imports	6,431,662	$2,450,198	38,243,960	$13,977,933

Exports of Domestic and Foreign Rubber Goods

	March, 1925		Twelve Months Ended March, 1925	
	Produce of Canada Value	Re-exports of Foreign Goods Value	Produce of Canada Value	Re-exports of Foreign Goods Value
UNMANUFACTURED				
Crude and waste rubber	$8,019	....	$113,544	.....
Total	$8,019	....	$113,544	.....
MANUFACTURED				
Belting	$73,293	....	$443,894	.....
Canvas shoes with rubber soles	201,194	....	1,812,215	.....
Boots and shoes	107,559	....	1,020,822	.....
Clothing, including waterproofed	6,574	....	31,383	.....
Hose	7,006	....	161,079	.....
Tires, casings	750,995	....	6,183,492	.....
Inner tubes	126,023	....	1,012,130	.....
Solid	19,599	....	213,986	.....
Other rubber manufactures	37,841	$2,965	365,911	$122,364
Totals	$1,330,084	$2,965	$11,244,912	$122,364
Totals, rubber exports	$1,338,103	$2,965	$11,358,456	$122,364

A.S.M.E. DISCUSSES APPRENTICESHIP ADMINISTRATION

At the spring meeting of the American Society of Mechanical Engineers, held May 18 to 21 at the Hotel Pfister, Milwaukee, Wisconsin, Harold S. Falk, vice president of the Falk Corporation, Milwaukee, read at one of the sessions a paper entitled "A National Apprenticeship Program." Forms used in apprenticeship administration, apprentice control charts and other material were exhibited and explained by H. A. Frommelt, apprentice superintendent of the Falk organization.

CHICAGO MEETING OF THE N. A. W. M. D.

There was a good attendance at the various sessions held by the National Association of Waste Material Dealers, on June 9 and 10 at the Congress Hotel, Chicago. The next meeting, occurring in October, will probably be held in the South.

There will also be hearings at the Hotel Traymore, Atlantic City, New Jersey, beginning July 14, 1925, and at 404 Chicago Union Station, Chicago, Illinois, beginning July 21, regarding Docket No. 23 issued by the Consolidated Classification Committee. The matters to be discussed include Subject No. 199—In Southern territory the less carload rating on rubber shoddy (reclaimed rubber) is to be reduced from 2nd to 3rd class.

DURING THE PAST YEAR SWITZERLAND'S IMPORTATIONS OF AMERICAN-MADE RUBBER SHOES totaled 199,953 pairs, value $170,169, this large figure being mainly due to the August purchase of 129,636 pairs, value $114,292. Corresponding importations during 1924 of rubber boots were 9,321 pairs, value $17,015.

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